THE GULF COOPERATION COUNCIL:

MEASURING PAST PERFORMANCE & FUTURE PROSPECTS

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ABSTRACT

This research is based on an economic analysis of the Gulf Cooperation Council (GCC), formed in 1981 by six Arab Gulf states: Saudi Arabia, Kuwait, Bahrain, Qatar, Oman and the UAE. The research has aimed to address and then find answers to the following two interrelated questions. First, whether there has been any significant improvement in the performance of these economies since the formation of the GCC. Second, using econometric estimation and forecasting techniques, the research examines whether the overall evidence are indicative of any positive moves towards full economic integration. Based on the main characteristics of these economies, the research has built a simple but applicable model of the customs union for the GCC. The findings derived from the estimated econometric models and our forecasts are generally statistically meaningful and stable. As the findings suggest, diversification, industrialisation and general economic innovations have been rather limited in the GCC over the past two decades. Successful economic integration rests primarily upon the idea of trade complementarity and evidence of scale economies, both of which shown to have been limited and growing slowly. In short, it can be concluded that due to a whole host of problematic issues, it is rather unlikely to assume dramatic changes to take place over the next few years. It is concluded that the best the GCC can come up with is to set up its common external tariff in line with the WTO recommendation as effectively as possible.

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LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller
ARIMA	Auto-regressive Integrated Moving Average
CET	Common External Tariff
CM	Common Market
CU	Customs Union
DF	Dickey-Fuller
EEC	European Economic Community
EU	European Union
EMU	European Monetary Union
FTA	Free Trading Area
GATT	General Agreement on Tariffs and Trade
GCC	Gulf Cooperation Council
LDC	Less-Developed Countries
NAFTA	North America Free Trade Association
TC	Trade Creation
TD	Trade Diversion
UAE	United Arab Emirates
UEA	Unified Economic Agreement
VAR	Vector Auto-regressive
WTO	World Trade Organisation

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CHAPTER ONE

INTRODUCTION & PURPOSE OF THE STUDY

1.1 Introduction

For nearly two centuries economists such as Smith, Ricardo, Mill, and more recently Heckscher and Ohlin have rejected the idea of protectionism as means of growth and hence have promoted the spirit of free trade as the only way to maximise the world welfare. The neo-classical trade theory postulates that trade expansion generates, inter alia, specialisation and scale economies, and that international competition enormously improves domestic economic efficiency. Furthermore, as Heckscher-Ohlin model of trade predicts, in a world with competitive markets, international trade would lead to long-run gains for all partners. Though it has been labelled as an 'engine of growth', Kenwood and Lougheed (1992: 5) point out that "expanding international trade is both a cause and an effect of national economic growth."

Ironically, serious steps towards promotion of free international trade only goes back to the late 1940s, when for the first time it was felt that an

international trade organisation would pave the way to eventual removal of trade barriers. Consequently, at Geneva in 1947, negotiations on international trade led to the establishment of General Agreements on Tariffs and Trade (GATT), with the prime objective of expanding multilateral trade via minimising trade barriers such as tariffs, quotas and preferential trade agreements. However, as basic forms of protection have been identified over time and some have been successfully removed from international scenes, new complex forms have then emerged. The advocates of protectionism have for long argued that full multilateralism is only an *ideal*, and hence being undoubtedly unattainable in an imperfect world. Some have gone further to argue that whilst free trade is beneficial for nations with similar economic strength, different means of protection must be employed by those developing economies experiencing the transition from agriculture to industry.[1] Indeed, such schools of thought have given rise to the growth of bilateralism and regionalism, particularly since the World War II, almost alongside the growing GATT. It is therefore not surprising that the World Trade Organisation (WTO), the successor to the GATT, has now been warned to concentrate on the phenomena of preferential trading agreements and of regional/non-regional Free Trade Areas (FTAs). It has been argued that a new equilibrium must

be sought between the WTO and these regional integrations; the former embodying non-discrimination among trading nations, whilst the latter are inherently preferential and discriminatory.[2]

The logic behind regionalism has been on the research agenda of social scientists for nearly 50 years. From political scientists point of view, regional integration is the only method available to states to secure peace and maximum welfare. (Mitrany 1966: 27-32). Other institutional and political forces being equal, economists, on the other hand, tend to primarily focus on market relationships among goods and factors of production within a region. To economists, therefore, a successful integration leads to net postive trade creation and welfare maximisation.

In particular, regional integration has been growing importance in Europe in the past four decades or so. The launching of the Single European Market Programme, better known as EC 1992, in 1985 and the difficulty in concluding the Uraguay Round have frequently been regarded as important factors behind the recent trend toward regionalism.[3] The term European Union (EU) came into existence in 1993 after the Maastricht Treaty, aiming to promote the means of forming the full economic

integration, encompassing European Monetary Union (EMU) – single central bank and single currency.[4] Despite its successes in extending its membership and implementing some policies, the EU is likely to encounter considerable difficulties in finding solutions to the economic (e.g. Single monetary agency) and political (e.g. extent of differences in democracy exercised in different member states) problems that it faces.

By definition, any international/regional integration aims to remove all discriminatory trade impediments between participating nations, moving towards certain elements of co-operation and co-ordination between them. However, in so doing, it is likely that *negative* externalities may be imposed on some or all the non-participants. The term *positive* integration is therefore referred to the case where, from Pareto improvement point of view, the welfare of the participating members has improved at no cost to the rest of the world; hence making it both efficient and workable.

1.2 Purpose of the Study

It is in this overall context that this research addresses the economic viability and efficiency of regional trading agreements within the WTO

framework. In the light of these developments, the research aims to investigate the potentials of a workable Customs Union model for the Arab Gulf countries, by making an extensive reference to other experiences. In testing for workability and economic viability of such a model, appropriate econometric models and simulation will be used extensively. In short, the research aims to find answers for the following two questions:

(i) Has there been any significant improvement in the performance of these economies since the formation of the GCC?
(ii) Are the overall evidence indicative of any positive moves towards much greater economic unity?

The emergence of the GCC between the six Arab Gulf oil producing countries - Saudi Arabia, Qatar, Bahrain, Oman, Kuwait and the United Arab Emirates (UAE) - back in 1981 was a first step towards future economic and political unity. Since then several attempts have been made to bring the community closer to the ultimate objective, but have most proven to be less than satisfactory. Due to rather relatively insignificant degrees of complimentarity and dissimilarities in their economic activities, it is believed that unless fundamental steps are taken towards diversification, the GCC's ultimate goal is somewhat far-fetched. Nevertheless, in the recent years, the GCC local demand has been expanding substantially giving rise to much greater diversity and hence

incentive to common market formation. Moreover, similarity in language and culture has provided the members with a unique natural tendency for unity.

1.3 Organisation of the Thesis

This thesis is organised as follows. Chapter Two provides detailed historical and some main issues relating to the Arab Gulf economies, by concentrating on relevant socio-economic indicators of the existing Gulf Co-operation Council (GCC). Chapter Three deals with general theoretical issues and methods of regional integration by making a special reference to building a model of regional integration for the GCC. Chapter Four reviews the existing time series and econometric models relevant to regional integration and attempts to apply such techniques to macro data corresponding to Arab Gulf countries. Chapter Five attempts to run a simulation on the basis of the findings from Chapter Four, aiming to test for workability of a model of a customs union for the GCC. Chapter Six offers some policy directives and their likely implications on the GCC, primarily based on the overall findings from previous chapters and the most recent developments in the GCC. Finally, Chapter Seven attempts to summarise the overall aims, achievments and contributions of the thesis

and hence offers some concluding remarks on the future of the GCC, and the research in this area.

ENDNOTES:

1. Amongst many see Brown (1988), Anderson & Hayami (1986); and for a series of papers on different aspects of protectionism see Greenaway et.al. eds. (1991).

2. See Bhagwati (1994), pp 9-11.

3. See De la Torre and Kelly (1992).

4. For a detailed and interesting backgrounds to EU and other related issues see McDonald (1999), pp 1-33.

CHAPTER TWO

AN ECONOMIC ANALYSIS OF THE GCC

2.1 Introduction

More than fifteen years after its official establishment in May 1981, the Gulf Cooperation Council (GCC) - an organisation that groups Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE) - appears to be developing and pursuing its ultimate goal of creating an integrated common market.[1] The power of economic integration is clearly outlined in the GCC's November 1981 Unified Economic Agreement (UEA), which superseded all previous bilateral and multilateral agreements among the members on economic issues. The UEA calls for intra-GCC freedom of movement of all factors of production, freedom of trade between member states and the building of a common economic infrastructure.[2] A potential natural affinity, sharing close proximity and a common language and religion and many attributes of a shared history, have been used by most officials in the Gulf to be the main reasons behind this unity. Whilst some Arab observers have seen the GCC as a naturally growing organisation, particularly in the economic field,[3] others have related its birth and its continued survival to mere potential threats coming from Iran and Iraq.[4] Whatever the underlying reason for its foundation, our aim in this chapter is to evaluate the economic performance of the GCC members in the light of their UEA, by making use of some general macroeconomic data.[5]

Niblock (1980), amongst others, reasons the necessity for some, however limited, social and political coordination and integration amongst the smaller Gulf states.[6] However, as he foresees, this would only be a necessary but not a sufficient condition for full economic unity. This is because the GCC is a unique economic case study when compared to most other regional integrating bodies. First, and foremost, the economies of all members of the GCC are heavily oil dependent.[7] Second, migrant workers represent nearly half of the total working population of the GCC. Third, due to massive revenues earned from extraction industry, income tax and value-added tax represent a very small part of government revenue. Fourth, owing to their massive perto-dollar earnings, the GCC currencies are heavily linked with the US dollar and hence with one another, creating a rather stable intra-GCC currency markets.

Heavy dependence on oil and the migrant workers have been matters of concern for most members of the GCC for some time. Theoretically, in the long run, full economic diversification and industrialisation would resolve these problems, paving the way forward towards a more effective common market. In reality, most member states have found this process rather slow and quite painful.[8] General decline and volatility in oil prices since the late 1980s have made these countries search for much greater and more efficient ways of achieving diversification. On the other hand, as has been argued in Ramazani (1988: 96), relying on their relatively much larger oil reserves, some members have been somewhat reluctant to move radically towards a coherent and sustain diversification strategy.

Since certain criteria must be met prior to economic integration, in this chapter we attempt to identify areas of strengths and weaknesses by

analysing the overall macroeconomy of the GCC. Considering that aspects of diversification and industrialisation are the main ingredients for any economic integration, we attempt to examine the overall economy on this pillar.

In part 2.2 we offer an overview of the economy of the GCC, by examining some general socio-economic indicators. Aspects of structural pattern of industrialisation and diversification will be discussed in part 2.3. Finally, this chapter closes with some policy recommendation and conclusions in part 2.4.

2.2 An Overview of the Economy

Despite its very low population density, the GCC stands as one of the world's most economically influential organisations. In real terms, its overall GDP per capita currently stands at around $10,000, the highest in the Middle East. The GCC members together possess nearly half of the world's proven oil reserves, and are major actors in world trade and international finance. On the whole, the GCC's major goal is to diversify the six economies away from dependence on crude oil by industrialising both in petrochemical and in non-oil sectors.

Oil production in the GCC countries amount to around 14 million barrels per day, generating - on the basis of $12 per barrel - about $65 billion a year, representing (at 1995 prices) nearly 35% of total GDP. Moreover, its oil reserves - according to the OPEC estimates for 1993 - stands at around 470 billion barrels, representing just under 60% of the OPEC total reserves and around nearly one-half of total world reserves. Given the

current rate of extraction, assuming no structural change in the pattern of demand for oil, it is therefore estimated that the GCC has as long as about 100 years to rely on oil. Oil and gas revenues are also considered to represent between 70% and 80% of governments' revenues.

Table 2.1 presents some general information on some socio-economic indicators for the six members. Although this table gives a snap-shot of a few indicators for the year 1998, several important points appear here to be wothnoting. First, Saudi Arabia is the major contributor to the GCC, with her GDP and population representing around 60% and 75% of those of the total GCC, respectively; giving her a natural potential for leadership.[9] Second, there is still a relatively good percentage of population living in rural areas - mainly tribal population - making industrialisation and mobilisation of labour somewhat difficult. This is being much more pronounced for Oman with 90% of its population living in rural areas. Third, about 63% of the GCC's work force come from outside the area; that being even much higher for UAE and Qatar. Fourth, the GCC members have enjoyed relatively low rates of inflation compared to the average EU and most OECD economies. Moreover, this has been the pattern for the past ten years in these countries. Except for Kuwait, the other members exhibit inflation rates not significantly different from the average GCC. Fifth, despite its relatively large oil reserves, Bahrain has demonstrated significantly lower dependence on oil compared to the average GCC; mainly due to development of her petrochemical and aluminium industries. Sixth, one of most striking features of the GCC countries is the size of oil contribution toward general government revenues - on average 76% of the GCC government earnings come from oil and only less than a one-third is made up from taxes and other contribution. This is profoundly different from the

average EU or OECD country where between 80% and 90% of revenue is derived from income and value-added taxes. Seventh, government spending, on average represents only one-third of total GDP, slightly higher than that of the average OECD; and hence private demand has been allowed to constitute a much larger portion of the GDP. Eighth, the GCC countries together have exhibited a massive trade balance of $37 billion in 1995, with Saudi Arabia constituting 55% of it. Ninth, the GCC together have a massive international reserves of around $52 billion, with Saudi Arabia contributing up to 77% of it. Finally, the falling oil prices have led to sharp decline in oil revenues, causing a sizeable budget deficit in the GCC states; currently standing at around $6.5 billion - nearly 3% of the total GCC's output.

2.3 Patterns of Structural Change in the GCC

As discussed earlier, table 2.1 only provides some general information about GCC for the year 1995. In evaluating the GCC's economic performance one requires to examine more comprehensive time series macro-economic data. By economic performance we do not merely relate to the overall economic growth, but also to attempt to find answers to the following four fundamental questions:

(1) Have the GCC countries been successful in reducing dependence on oil over the last decade or so? If so, in what sense?

(2) Has any significant diversification occurred within the GCC over the last twenty years? If so, what sectoral patterns have been evolved?

(3) Has there been any significant change in demand for goods and services produced in the GCC?

(4) Are the overall evidence indicative of any positive moves towards full economic integration?

2.3.1 The Supply Side

As a first step in answering these questions, tables 2.2 and 2.3 are presented showing the contribution of each sector to the GDP for these six countries for the years 1975, 1985, 1990 and 1995; and the overall growth rates of sectoral contribution over the periods 1975-85, 1985-90, 1990-95 and 1975-95, respectively. By examining the sectoral contribution over this 20 year period we will be able to draw some coherent and systematic conclusions on the overall performance and direction of the economy of the GCC countries. A careful examination of these tables provides us with the following conclusions:

(i) As the overall picture for oil and mining suggests, up to the mid-1970s the reliance on oil is very much pronounced at the massive rate of 62.7% for the GCC. As the 1975 data show, unlike the others, Bahrain has demonstrated its much lower rate of dependence on oil at nearly one-half of the average - that being statistically significantly different from the average GCC at the 5% level of significance. However, as Bahrain continues to reduce its dependence on oil over time, the other members have also shown to do so at much faster growth rates. Over the period 1975-85, as can be drawn from both tables, the GCC on the whole managed to reduce their oil dependence by around 25%, coming somewhat closer to that of Bahrain. Despite the fact that further negative growth rates in the oil sector were experienced by the GCC over the period 1985-90 and 1990-95, they were however at much lower rates compared to those of the 1975-85 period. As table 2.3 demonstrates, over the 20 year period, the GCC on the whole have managed to reduce their

dependence on oil by 30%. Although most economists argue that the decline in oil dependence has been merely due to the volatile oil markets and ever-declining oil prices - particularly over the late 1980s and early 1990s - it must also be borne in mind that these countries have had a long term policy aiming at tackling the oil dependence dilemma for some time.[10]

(ii) The manufacturing sector generally constitutes around 8%-9% of total GDP. Once again, Bahrain's economy tends to be more manufacturing orientated than others. Given its multi billion dollar aluminium, petrochemical and refinery industries, Bahrain's manufacturing contributes to the GDP in the tune of 23% in 1975, significantly higher than that of the other members. Despite this, Bahrain's manufacturing has been declining since 1980s mainly due to competition from abroad. Considering that there has been a massive reduction in the share of oil in GDP, the manufacturing seems not to have grown as fast as anticipated. Over the period 1975-85, its share grew by about 6.5% for the entire GCC, giving a rather disappointing average annual growth rate of just above 0.5%. Over the last twenty years manufacturing sector has seen to increase its contribution to GDP by about 3% for the entire period, a somewhat disappointing performance given that the oil sector's share has diminished by one-third. On the whole, the UAE and Qatar, given their relatively smaller scales of operation, have demonstrated much greater rates of growth of manufacturing of 9% and 8.6% respectively, over the entire period 1975-95, and those being significantly higher than the average GCC.

(iii) In terms of its relative contribution to GDP given in table 2.2, the agriculture sector has hardly changed over the past twenty years.

Although Oman's agriculture has shown to maintain its share of around 2%-3%, it is not significantly different from the rest. Over the last five years both the UAE and Saudi Arabia have managed to increase their shares of agriculture from 0.8% and 1% respectively in 1975 to 3.2% and 4% respectively in 1995. Production of dairy products and better use of cultivated land are the major reasons behind such growth rates in Saudi Arabia and UAE.

(iv) Despite much publicity that has been given to expansion of the construction sector in the GCC, its share has hardly changed over time. A careful examination of table 2.2 suggests that Saudi Arabia and the UAE are by and large the main spenders in the construction sector of the GCC; but their shares are not, however, significantly different from the average GCC. Between 1985 and 1990, as Table 2.3 shows, the construction sector in all GCC countries experienced negative growth rates in their share of GDP, mainly due to unstable international markets, Iran-Iraq war and declining oil prices.

(v) In so far as the wholesale and retail trade are concerned, Oman appears to be ahead of others in relative terms, where on average over the period 1975-95, the sector has contributed to GDP in a tune of around 13%. This sector has had its steady growth of 2.5% over the entire period in the GCC as a whole - a performance almost similar to that of the manufacturing sector. Since tourism in most GCC countries is in the early stage of development, it is therefore anticipated that its growth in the next decade or so will nearly double the size of the contribution of the retail and wholesale trade to GDP. That appears to be more so in Saudi Arabia and the UAE.

(vi) Since its independence in 1971, Bahrain has been identified as a major Middle Eastern centre for banking and other related services; its contribution to GDP in 1985 stood at around 18%, somewhat similar to that of the oil sector. As tables 2.2 and 2.3 suggest, as Bahrain was by far ahead of the average GCC in 1975, the others have been able to expand their banking and finance sector almost equally. By the end of 1995, as table 2.2 shows, Kuwait, Qatar, Oman and the UAE have almost caught up with Bahrain in this area of activity. Over the entire period of 1975-95, as given in table 2.3, the sector on the whole has seen to enjoy growth rate smaller than that of others. As business tends to evolve and develop further in the Gulf, it is anticipated that banking and finance sector to be a growth area in the next decade or so.

(vii) Other services, which in the main include government services, have been growing in importance in the GCC countries, from about 5% of total GDP in 1975 to almost 22% by 1995, with no country deviating significantly from it. According to EIU, a large proportion of this contribution is due to defence and military expenditure.

(viii) Despite substantial reduction in oil dependence over the entire period, as shown in Table 2.3, GDP in real terms has grown by nearly 4% over the twenty year priod, giving a long-run average annual growth rate of 0.2%. As figures suggest, massive growth in average GDP of 6.4% has occurred over 1975-85, and then slowed down since the late 1980s. On the whole, over the entire period, it appears that the UAE, Oman and Bahrain have managed to perform better than the rest.

The findings detailed above are, in general, very much in line with those of Looney (1994) in which data - based on GDP, non-oil GDP, exports

and non-oil exports, over the period 1975-1985 - for a large number of Middle Eastern and North African countries are considered.

2.3.2 The Demand Side

In order to analyse whether there has been any fundamental change in demand for goods and services in the GCC we present table 2.4 giving data on some domestic indicators of demand: population, working population, domestic absorption (gross fixed capital formation and private consumption), imports of goods and services and government spending, over 1975-95. The following important findings may be worthnoting from table 2.4.

(i) The overall population of the GCC standing at 6.98 million in 1975 has more than doubled over the period 1975-85, giving a massive average annual growth rate of 12.6%. Since the indigenous population annual growth has been estimated to be around 4% over the said period, it can therefore be argued that the migrant population - mainly from the other Arab countries and Asia - have been responsible in main for such massive growth rates. Over the mentioned period, Saudi Arabia and the UAE show to have more than doubled the size of their population, being higher than the rest. However, the period 1985-95 sees a rather slower rates of population growth compared to the previous period: the total population of the GCC grew by 4.5% per annum, as the number of immigrants have been dropped significantly. On the whole, over the last twenty years, the total population of the GCC has increased tremendously by more than three fold, giving an average annual growth rate of 11.4%. Once again, it must be borne in mind that more than half of the growth has been maintained by the immigrant working population and their families.

(ii) Although over the next twenty years or so the reliance on migrant workers have been reduced substantially, such workers, on average, still represent 63% of the total working population in the GCC. However, the indigenous working population has been growing over the twenty year period at the average rate of 4%-5% per annum. Despite this significant performance, there remain several obstacles, which need to be removed to allow further participation of indigenous population in economic activities. Training programmes, de-tribalisation, and emancipation of women are some of the main issues which need to be addressed in tackling this problem. Some of such issues have been carefully discussed in Looney (1994: 274-9).

(iii) The private sector investment - gross fixed capital formation - which constitutes around 20% of total GDP has been growing over the entire period. As in the late 1970s and up to mid-1980s private investment has been growing annually at an unprecedented rate of 8% and 16% , respectively, it has somewhat slowed down to around 2.5% over the 1985-95. The UAE and Saudi Arabia have been enjoying much greater rates of growth of investment over the latter period. Further examination of the findings in Table 2.4 suggests a rather steady rates of marginal propensity to invest of around 38% over the entire period for the GCC as a whole. In particular, Bahrain, Saudi Arabia and the UAE have been the states which have shown much greater rates of improvement in investment development over the entire period. These countries have, in main, been able to attract a large quantity of foreign investments into the region.[11]

(iv) The pattern of development of private consumption over the past twenty years is interesting in that its contribution to GDP has more than doubled. Moreover, over the period 1975-85, it grew in real terms by

around 20% per annum - six times that of the real GDP. However, like most sectors, the general private demand has been slowed down by a host of factors, detailed earlier; currently growing at a rate of around 2% per annum. Whilst over 1975-85 all GCC countries enjoyed increasing rates of consumption, for Kuwait and Oman the pattern changed dramatically over 1985-95. These countries experienced negative growth rates of consumption and sharp decline in shares of consumption from their respective GDP. Once again, both the UAE and Saudi Arabia have demonstarted much larger increases in private consumption over the entire period, significantly different from the rest.

(v) As far as the governments in the Arab Gulf states are concerned, their contributions through spending have been somewhat limited before the 1970s. Two main reasons may be put forward for this: (1) Gulf states such as Bahrain, Qatar and the UAE were given independence from the UK in 1971; (2) massive oil revenues earned by the governments in the early 1970s increased their influence and responsibilities to spend on welfare. As table 2.4 shows, massive oil revenues made it possible for the GCC governments to increase spending from $13.7 billion in 1975 to $46.2 billion in 1995, a colossal average annual growth rate of around 24%. As expected the share of government spending in the GCC from GDP has increased substantially from 11% in 1975 to around 34% in 1995 - a respectable annual average growth rate of 10%. A similar picture seems to be emerging: countries with relatively larger oil revenues (Saudi Arabia and the UAE) have experienced much larger increases in shares of their government spending.

(vi) The early 1970s oil revenues led to general rise in demand for goods and services in the GCC. Due to their limited industrial and production

base, most of demand had to be imported from the industrial and developed economies. By the end of 1975 the total imports of the GCC stood at around $12 billion, representing just over 9% of the total GDP. Saudi Arabia alone was responsible for around 40% of the total imports. By the end of 1985, the total imports had climbed to about $40 billion, that is 22.5% of total GDP; with Saudi Arabia's share rising to a colossal 52%. As the table suggests, on average, the total imports have risen, at least, by 24% per annum in the GCC; perhaps one of the largest rises in real imports experienced by any region over the period. Although by the end of 1995 the size of total imports has increaded to $62 billion, compared to the previous period the average annual percentage rate rose only by a moderate rate of 5.6%. Nevertheless, in relation to GDP, the findings suggest that the GCC have become more dependent on imports - its share from the GDP rose from 22.5% in 1985 to 30.5% by the end of 1995. Main importers to the GCC are the USA (15%), Japan (17%) and the EEC (8%); mainly providing food and consumer goods.

Table 2.5, on the other hand, shows the external demand for GCC products and services. Total exports has been rising over the entire period, but at much lower rates in the 1980s and 1990s compared to 1970s. However, the share of total exports from GDP has risen from 45% in 1975 to 62% in 1995; mostly being due to the contribution of crude oil exports. Although Saudi Arabia is responsible for a large portion of total exports of the GCC, her share has dropped significantly over time from 53% in 1975 to 35% in 1995. As argued earlier in this chapter, the degree of dependence on oil in the GCC has dramatically reduced over the last two decades. This is not so for the exports of crude oil over time: as % of GDP it has increased from 27% in 1975 to 36% in

1995, though as % of total exports it has dropped slightly from 60% to 58%.

Further examination of Table 2.5 suggests that though exports of argicultural products have increased by four folds over the twenty year peiod, this sector only contributes to total exports in a tune of less than 1% by the end of 1995. The chemical and petrochemical sector has been the growth sector over the past few years; its contribution to total exports, though very limited, has been growing significantly over time, at an average rate of 20% per annum. It is anticipated that its share will be in the region of about 10% of total exports in the next ten years. Despite Bahrain's relative performance in the area of refinery and pertrochemicals, Saudi Arabia has emerged as a major contributor to this sector, contributing up to 80% of total exports of this sector. The exports of manufacturing sector has also experienced a sharp growth over the entire period; in real terms it has grown from $0.5 billion in 1975 to $2.2 billion by the end of 1995. Its contribution to total exports hardly reaches 2%, but prospects seem to be good for the early 21st century. Between 1985 and 1995, Saudi Arabia, UAE and Bahrain appear to have been doing quite well in this area. Finally, just over one-third of the total exports of goods and services in the GCC is made up, in main, of contributions by banking/insurance and food, drink and tobacco industries. The UAE, Bahrain and Kuwait seem to have done better in these arears of activity. Whilst Abu Dhabi (the UAE's capital city) has become one of the major financial centres of the Middle East, UAE's food, drink and tobacco industry has relatively experienced much greater rates of growth over the past few years. Kuwait and Bahrain have also done extremely well in banking and insurance. Most exports of the GCC are destined to Japan (25%), the USA (15%) and the Far East (10%).

2.3.3 The Public Sector

Ever since the of oil boom of the 1970s, the governments of the GCC countries have enjoyed massive revenues, which have been used to finance ambitious programme of infrastructural, industrial, health and education developments. As shown in table 2.4, on average, the contribution of government spending to GDP in the GCC countries has increased by more than five folds over the period 1975-95; currently representing nearly one-third of the GDP. Most of these programmes and budget allocation are set out in each and every member's development plans normally running for five years.[13]

While the simultaneous achievement of these goals appeared possible in the 1970s and the early 1980s, since the late 1980s lower oil prices have put increasing pressure on governments' finances, resulting in rising debt. At the 1995 prices, the total GCC governments deficit stood at $6.5 billion, representing nearly 3% of their total GDP. Although this figure does not appear to be worrying, the trend has been upward in the past few years. Table 2.6 gives detailed information relating to governments' revenues and expenditures, at the 1985 constant prices, over the period 1975-95. A thorough examination of table 2.6 leads to the following points.

(i) Total government spending has been upward for each and every GCC member over the period. On the whole, as indicated in this table, it has been growing at a massive average annual rate of 26% over 1973-75, 24% over 1975-85, and at a much slower rate of 5% over 1985-95. As expected, Saudi Arabia is responsible for nearly two-thirds of total GCC spending, and that being significantly different from the average value.

Though very little information can be found on areas of spending in the GCC, both S. Arabia and Oman tend to have allocated nearly one-third of their total spending to defence and security means since the mid 1970s. Generally, the GCC appears to spend around a quarter of its spending on health and education, that being almost twice that of the EU.

(ii) Share of spending from GDP has also increased substantially: Bahrain from 13% in 1975 to 22% in 1995; Kuwait from 23% to 51%; Oman from 20% to 38%; Qatar from 21% to 40%; S Arabia from 10% to 40%; and UAE from 8% to 15%. Due to their much more comprehensive open market environment, both the UAE and Bahrain have maintained relatively much lower rates of government participation, and that has enabled the private sector to grow much more significantly than elsewhere in the Gulf. On the whole, at constant prices of 1985, the GCC spending to GDP has doubled over the 20 year period from 15% to 34% - an average annual growth rate of 6%.

(iii) Due to having full ownership of all natural resources - mainly oil and gas - and most industrial operations, the revenues made by the GCC governments experienced sharp increases in the 1970s, when on average the revenues grew at an unprecedented rate of 12% per annum. This enabled development of massive infrastructural and industrial operations possible. However, as the oil boom was ending in the early 1980s, the average annual growth rate had declined to around 2% over 1985-95. Saudi Arabia and Kuwait have been the major earners in the GCC, together they own by as much as 80% of total GCC revenues. Although its share from total revenue has declined substantially over time, oil revenues made by GCC governments still do represent a significant proportion of total revenues-currently at an average rate of 79%. There

is no reliable data on the breakdown of the other areas of government revenue in most Gulf states. Nevertheless, as the EIU country reports suggest, on average, income taxes represents only around 1% to 2% of total revenues. For example, in Saudi Arabia by the end of 1995, 75% of revenues were earned from oil and gas, and around 13% had come from investment incomes through government's direct involvement in banking and insurance. Customs and other related revenues represented the remaining source of earnings.

(iv) Once being states with healthy surplus in their balances back in the 1970s, the GCC countries have been experiencing the pains of budget deficit for some time. In particular, since the early 1990s, mainly due to world-wide recession and depressed oil markets, the Gulf states' balances have deteriorated sharply. S Arabia and Kuwait, the big earners and spenders, have been adversely affected, so that together are responsible for nearly 85% of total GCC deficit. In relative terms, these can be translated as 15% of Kuwait's GDP and 6% of S Arabia's GDP. On the whole as table 2.6 suggests, the current deficit stands at $13 billion - 6% of total GDP - though not very significantly out of norm, this is somewhat unprecendented for these nations wishing to maintain their massive development plans for the future.

Figures 2.1 to 2.6 depict clear pictures of the extent of imbalances in budgets over the twenty year period, supporting the earlier arguments. In short, as shown by these figures, the GCC countries - the UAE excepted - had enjoyed surpluses up to mid 1980s, and have been experiencing relatively large deficits since then.

2.3.4 The Money Market

Despite being newly developed economies, the Gulf states have managed to develop their money, banking and other financial markets very rapidly over the past twenty years. Oil revenues, in the main, have been responsible for such speed of development. Currency, banking and monetary management are controlled by each and every GCC member's central bank, better known as *Monetary Agency* (MA). Stock Exchange markets though exist in Saudi Arabia, Kuwait and the UAE, they have not yet fully developed.

One of the main features of the GCC is that it is one of the most over-banked areas in the world. In particular, Bahrain has, since 1975, developed its offshore banking, and has become an alternative financial centre to the troubled Beirut. Currently there are 19 commercial banks and 47 offshore banking units with the total asset of $100 billion. Equally, the UAE remains to be well over-banked, with 19 local and 28 foreign banks, having a total of 230 and 119 branches respectively. Since the mid 1980s recession and the collapse of the BCCI, the central banks in most GCC countries have introduced some tight measures controlling commercial banks reserves and liabilities.

Despite its relatively lower population urbanisation and the islamic based culture, the banks in the GCC have managed to attract depositors and investors over time in a more efficient manner. As table 2.7 shows, over the period 1985-95, the GCC commercial banks together have managed to increase their total deposits (consisting of demand deposits, government deposits and quasi money) from just around $70 billion to nearly $94 billion, a total growth of 35% over the ten year period, giving an average growth rate of just over 3.5% increase per annum. The Saudi

Arabian share of total deposits from the GCC has experienced a decline from 46% in 1985 to 41% in 1995. This is mainly because both the UAE's and Kuwait's banks have been able to attract relatively more deposits than others, as the former appears to be catching up with Saudi Arabia. By the same token, capital and reserves of commercial banks in the GCC has shown a sharp increase over the ten year period by 62%, giving an average annual growth rate of 6% per annum. The difference in size of capital and reserves of commercial banks are indicative of the number of such banks operating in these countries, but also determined by monetary agencies rules and regulations in different states.[14] As a source of security and health of banking system, liability-asset ratio is monitored by all the GCC countries. As shown in table 2.7, despite some tight measures introduced by GCC central banks, this ratio, though not dramatically, has increased for the GCC on the whole from 36% in 1985 to 40% in 1995. Kuwait commercial banks tend to exhibit the largest ratio of around 60% over the period; that, however, not being significantly different from the average value.

The broad money supply in the GCC countries has also experienced sharp rises, primarily due to massive rises in quasi-money deposits. Details of the growth of broad money supply and its determinants are given in table 2.8. As this table suggests, with the exception of Bahrain, quasi-money (QM) in GCC has had the largest annual growth rates over each and every sub-period. Conversely, the growth of M0 has slowed down over the period, as more money has been absorbed in the banking system. Despite such massive growth in money supply, it is interesting to note that the retail price index has had a moderately low growth rates over the same sub-periods.

As banks have attracted more depositors over time, the share of currencies in the hands of individuals relative to broad money supply has fallen dramatically. As figure 2.7 shows, the share of M0 from broad money supply has generally dropped in the GCC, more pronouncedly in Oman, Qatar and Saudi Arabia. Political and economic stability as well as rises in urbanisation of population in the region can be regarded as other important factors behind this phenomenon. As can be seen from this figure, on the whole, the GCC share of M0 from broad money over the twenty year period has dropped from around 50% to less than 30%.

Finally, it is worthnoting that due to massive rises in money supply, accompanied by much lower growth rates of GDP and inflation, the income velocity of money has been declining sharply in almost all GCC countries over the period.[15] This is clearly depicted in Figure 2.8, where countries such as Saudi Arabia and Oman tend to have experienced much greater rates of decline in their income velocity of money.

2.3.5 International and Intra-GCC Trade

As mentioned earlier, the GCC countries have demonstrated their willingness and commitment to fully free international trade. According to IMF estimates of a measure of *openness*, the Arab Gulf countries are classed as most open economies in the world.[16] It may be argued that the reason behind high degrees of openness is due to massive oil exports made by these countries. The GCC countries are also main consumers of the OECD products: Japan, the USA and the EU are responsible for around 70% of the GCC's total imports; somewhere in the region of $25 billion (nearly 20% of GCC's total external trade). Moreover, data relating to 1993 suggests that total customs revenue earned by the GCC governments represented only between 3-5 per cent of total revenues,

much lower than that of the average EU, Japan, and the USA.[17] Table 2.9 gives the GCC's direcction of trade for 1985 and 1995. The findings in this table can be summarised as follows.

The data relating to total exports and imports suggest that by the end of 1995, exports of goods exceeded that of imports by two folds. However, over the period 1985-95, the imports have been rising by an average rate of 5.6% per annum twice as big as that of exports.

Japan as a major trading partner, has maintained its large share of imports from the GCC of around 35% - Qatar and UAE being much more involved than the rest in providing their exports, mainly of oil, to Japan. By the end of 1985, Japan though having 17% of the total share of the GCC imports, this by far being smaller than her imports from the GCC. Moreover, by the end of 1995, this share has also dropped to around 14%. Amongst others, Bahrain is the most prominent customer of Japanese products and has maintained this over the period.

As for the USA, she takes relatively lower share of GCC's total exports: though this has trebled over the past ten years, it currently represents only 8% of the GCC's total exports. Saudi Arabia has been the most successful country in the GCC to have infiltrated in USA markets: its exports to USA rose from 5.4% of its total exports in 1985 to 21.5% by the end of 1995. At the same time, Saudi Arabia is a major customer for US products: her share of imports from USA rose from 16.9% to 22.4% over the last ten years, a rate of growth much smaller than her exports to USA. On the whole, the GCC share of imports from USA is currently at around 13.6, an average rise of 6% per annum. Recently, as data

suggests, Kuwait has very significantly increased her share of imports from the USA to around 25%.

Although representing only 14% of total share of the GCC's exports, the EU is responsible for just over 30% of total imports of the Gulf states; by far the largest single contributor to GCC's imports. Though no country shows shares significantly different from the average, Saudi Arabia, Kuwait and the UAE tend to be and maintain larger shares of their imports from the EU. However, over the ten year period, as these figures suggest, there has been a relatively slight decline in the average share of the GCC's imports from the EU.

A careful examination of the table suggest that although the extent of intra-GCC trade is generally small, it has grown on an average rate of 5% per annum over the period - exports rising by 6.5% and imports by 2% per annum. Bahrain is by far the largest contributor to GCC-intra trade, with her shares of imports from and exports to GCC being significantly different from the average values at the 5% level of significance. Moreover, Bahrain's total trade with GCC has more than doubled over the ten year period, currently standing at around 40% of her total international trade. Oman is also a major contributor to total intra-GCC trade: her share of intra-GCC imports represents nearly one-quarter of her total imports. It is believed that a large proportion of this share is due to re-exports of goods from UAE and Bahrain.[18]

Over the past decade the GCC countries have made every attempt to develop their agriculture and promote agricultural exports. Although the value of argicultural exports has increased by five folds over the last decade, its contribution to total intra-GCC trade hardly goes beyond 5%.

As the GCC National Accounts statistics indicate, on average up to 80% of total exports within the GCC countries is comprised of manufacturing/industrial products; mainly being chemicals, petrochemical by-products, building materials, metal products, and small machinery and appliances. The contribution of exports of industrial products in relation to total exports for each GCC member, as well as to total intra-GCC trade are presented in Table 2.10. According to this table, the exports from Bahrain, Kuwait and the UAE are very much industrial orientated. For example, whilst 41% of Saudi Arabia's total exports being manufactured products, those of Bahrain and Kuwait being well over 95%. Moreover, in this table total exports of manufactured products are shown to have increased by more than 1.5 times from $659 million to $1.7 billion over the last ten years - giving an average annual growth rate of 16%. The last two columns of Table 2.10 show the contribution of exports of manufactured products to total intra-GCC trade. The UAE and Saudi Arabia are currently the largest contributors, giving ratios of 30% and 29% respectively. On the whole, the average share of total manufactured exports from total intra-GCC trade has risen significantly over the ten-year period from 9.4% to 16.5% - giving an average growth rate of 7.5% per annum.

2.4 Conclusions

In this chapter attempts have been made to examine several economic issues relating to the operations and development of the GCC countries over the past decade or so. Having examined the demand and the supply sides of the GCC economies, the evidence suggest that new markets have evolved, general demand has risen and some forms of diversification have taken place over the period 1975-95. It has become evident that in

so far as the Gulf States are concerned, the major economic objective is to diversify away from oil, and become industrialised. As the data suggest, diversification has been slow, but intra-GCC trade has increased significantly over the period, mainly due to development of giant petrochemical/refinery industry and some small manufacturing units. The path toward full economic integration is somewhat far-fetched at the moment, but some steps have been taken up as regards removal of all customs duties, unification of regulatory measures governing wholesale trade, and harmonisation of property rights amongst the members.

Intra-GCC trade, though, has increased significantly, it currently represents only around 10% of total trade, and that has been the major reason for the slow progress in GCC full unification. As shown earlier, though oil dependence has fallen sharply over the period, oil revenues still constitute up to about 35% of total GDP of the GCC countries.

In short, oil dependence has not fallen as much as anticipated, diversification has been rather sluggish, and labour mobilisation has not been successful over the given period, and these have been the main ingredients of slow progress toward full economic integration. Though some authors[19] believe that the prospects for the GCC look fairly promising in the long term, further econometric investigation is required in estimating and evaluating the effects of relevent socio-economic factors in the process of diversification in the GCC. These will be the subject of our analysis in the next chapters.

ENDNOTES

1. For a useful summary of the UEA charter and articles see J.A. Sandwick (ed) (1987), pp. 217-49.

2. Additional provisions of the agreement include elimination of customs duties between GCC states; coordination of import and export policies and regulations; coordination of oil prices; standardisation of industrial laws and industrial activities; coordination of technical and training affairs; a cooperative approach to land, sea and air transportation policies; and establishment of a unified financial, monetary and banking, including the possibility of introducing a common currency.

3. For example see EIU Country report, UAE, 1995/6. p 38. Also, T.Y. Ismael & J.S. Ismael, The Arab Gulf States, pp. 454-6, in Ismael & Ismael (ed) *Politics and Government in the Middle East and North Africa*, (Florida International University Press), 1991.

4. For example see J.D. Anthony, "The GCC: a new framework for policy coordination", pp. 38-59, in H.R. Sindelar & J.E. Peterson (eds.), *Crosscurrents in the Gulf*, Routledge, 1988.

5. For a detailed historical background to the formation of the GCC see J.Christie, History and Development of the Gulf Cooperation Council, pp.7-20, in J.A. Sandwick (ed.), 1987.

6. Niblock (1980a), pp 15-17.

7. The GCC states can be defined as "rentier states", since rent income from oil plays a major role in their economies. This is sometimes referred to as "Dutch Disease". It is a disease because the real appreciation reduces non-oil exports which are believed to be essential for a country's welfare in the long run.

8. For a summary of such arguments see Y. Stournaras, "Is the industrialisation of the Arab Gulf a rational policy?", *The Arab Gulf Journal* , April 1985, pp 21-8.

9. This finding is dissimilar to that of the EU, where no single country's GDP contribution exceeds 20% of the total. However, in the EU, Germany appears to possess a relatively larger share of the community's trade.

10. For a thorough analysis of current issues and policies relating oil sector in GCC see H. Askari & B. Dastmalschi, "Evolution of a GCC oil policy", pp. 85-105, in J.A. Sandwick (1987), op.cit.

11. For some detailed analysis and evaluation of investment in the GCC, see H.T. Azzam, *The Gulf Economies in Transition*, MacMillan, 1988, pp.33-44.

12. *EIU*, country report: Bahrain, 1995.

13. For further detail see IMF reports on economic development of the GCC members.

14. Variations in banking regulations though not very significant but can be important. For example, under the Saudi rules, commercial banks are required to maintain with Saudi Arabia Monetary Agency (SAMA) non-interest bearing deposits of 7% on demand deposits and 2% on quasi-money deposit. SAMA also has the authority to impose a variety of credit controls, including ceilings on some categories of bank loans and credit. In contrast, commercial banks in the UAE are required to deposit only 5% of their total demand deposits with the central bank. In addition, in recent years, it has become a requirement that all banks operating in the UAE must conform to risk-weighted capital adequacy ratio of 10%. Moreover, the Bahrain Monetary Agency (BMA) tends to be more supportive of offshore banking units, and has generally been known as more relaxed about reserves and liquidity ratios of commercial banks. However, recently, as there have been more cases of bankrupcy in the banking sector, more radical measures on credit and loans and liquidity ratios have been introduced by the BMA.

15. By income velocity of money we refer to the conventional ratio of GDP/real money supply. The declining velocity has been observed in almost all developing economies over the past decade or so and

is therefore not unique to GCC countries. Nevertheless, the extent of decline is much more marked for this group of countries mainly due to massive oil revenues pushing up domestic money supply.

16. By openness we refer to the ratio of exports plus imports over nominal GDP. By the early 1990s, it has been estimated that whilst Japan and the USA showed openness ratios of around 20%, that of the EEC was around 40%-50%, and that of the GCC stood in the range of 90%-130%.

17. See EIU Country Report, S. Arabia, 1995.

18. See EIU Country Report, UAE, p. 34.

19. For example see A. I. El-Kuwaiz, 'Economic Integration of the Cooperation Council of the Arab States of the Gulf: challenges, achievements and future outlook', in J.A. Sandwick (ed.), op.cit. pp. 71-83.

Table 2.1
Some selected economic indicators: GCC Countries
(1998)

	GDP $ Bil	RPI %	Oil Revenue %GDP	%gr#	Population (mil)	%urban	Labour Force (000)	%non-GCC	Govt. Spend % of GDP	C+I@ %GDP	Trade Balance $ Bil	Budget $ Bil	Int. Reserves $ Bil
Bahrain	4.66	2.12	17.5*	63	0.53	82	132	46	25	72	-0.32	0.12	1.16
Kuwait	26.3	4.13*	40.8	85	1.21	94	395	65	37	75	1.57	-1.61	3.89
Oman	11.2	2.00	41.6	75	2.00	10*	260	42	38	50	1.63	-0.73	0.98
Qatar	8.01	1.85	35.6	82	0.54	88	135	85	40	49	7.71	-0.21	0.66
S Arabia	125*	2.35	35.5	74	16.9*	77	3150*	50	37	63	20.5*	-3.88*	40.2*
UAE	43.3	2.36	38.8	76	1.68	79	905	88	11*	78	5.68	-0.19	5.24
Total GCC	218.5	----	----	---	22.9	---	4652	---	---	---	36.74	-6.50	52.1
Average	36.4	2.47	35.0	76	3.85	72	775	63	31	65	6.12	-1.08	8.68
St. Error	42.2	0.72	8.32	7	5.92	27	1093	18	10	11	7.11	1.39	14.4

@ Consumption plus private investment. # Government Revenue.
* significantly different from the average value at the 5% level of significance.

Sources: All the data, except for private demand and GDP, collected from EIU, country reports, 1995/6. Data on private demand collected from Datastream. data on GDP were mostly collected from Biz Ed, World data. Population data are based on 1992/3 survey.

Table 2.2
Sectoral Contributions to GDP (%): GCC Countries

	Sec-1	Sec-2	Sec-3	Sec-4	Sec-5	Sec-6	Sec-7	Sec-8	Sec-1	Sec-2	Sec-3	Sec-4	Sec5	Sec-6	Sec-7	Sec-8
				(1975)								(1985)				
Bahrain	1.6	27.8*	23.0*	5.4	7.2	10.1*	16.1**	8.8	1.1	18.1*	11.3	9.6	9.1	17.7*	18.5*	14.6
Kuwait	0.3	70.4	5.7	6.0	7.0	3.5	6.4	0.7	0.5	50.2	6.2	3.4	6.8	4.8	6.0	22.1
Oman	2.8	67.2	0.3	9.8	9.9	6.1	3.3*	2.7	2.8	47.8	3.2*	7.0	12.1	8.6	3.9	14.6
Qatar	0.7	68.2	2.6	7.8	5.0	3.1	3.0*	9.6	1.0	43.2	7.1	6.1	5.3	3.2	3.0	31.1
S. Arabia	1.0	75.8	5.3	5.5	4.2	2.3	3.6	1.3	2.9	36.0	8.1	13.1	9.6	5.4	7.8	12.1
UAE	0.8	67.1	0.9	10.9	5.6	4.1	5.5	5.1	1.4	45.3	9.3	8.9	8.8	9.0	6.3	11.0
Average	1.6	62.7	6.3	7.5	6.5	4.9	6.3	4.7	1.6	40.1	7.5	8.1	8.6	8.1	7.6	17.6
St. Error	0.9	16.3	7.8	2.1	1.8	2.6	1.4	3.5	0.9	10.8	2.2	3.0	2.1	4.8	5.0	7.0
				(1990)								(1995)				
Bahrain	1.0	21.3	16.8	6.2	9.8	12.8	11.1*	21.0	1.0	17.2	15.1*	6.6	11.8	14.6	13.2*	20.5
Kuwait	0.8	47.7	12.1	2.3	7.7	11.1	3.8	18.1	0.5	43.4	8.6	3.3	5.4	12.2	3.0	13.6
Oman	2.7	41.5	4.2	4.4	13.4*	7.3	5.3	11.2	2.2	38.9	4.4	4.6	15.3	9.4	5.4	19.8
Qatar	1.0	34.8	10.8	4.7	6.1	10.2	2.7	29.7	1.1	32.4	11.2	4.9	6.8	12.2	2.8	28.6
S. Arabia	2.9	35.3	7.9	9.1	7.3	4.0	6.7	26.8	4.0	32.3	8.6	9.6	7.4	3.3	7.0	24.9
UAE	1.6	46.7	7.4	8.1	9.1	5.1	6.6	15.4	3.2	32.4	9.9	8.8	7.1	7.3	6.8	24.5
Average	1.7	37.8	9.9	7.2	8.9	8.4	6.0	20.3	2.0	32.8	9.6	6.3	9.0	9.8	6.4	21.9
St. Error	0.8	9.0	4.1	2.7	2.3	3.0	2.6	6.3	1.3	8.3	2.6	2.3	3.4	3.9	3.5	8.8

Notes:

Sec-1: Agriculture Sec-2: Oil & Mining Sec-3: Manufacturing (including petrochemicals) Sec-4: Construction Sec-5: wholesale & retail trade
Sec-6: Bank &Insurance Sec-7: utilities Sec-8: others (including government services)

* significantly different from the average value at the 5% level. ** significantly different from the average value at the 1% level.

Sources: see table 1.1.

Table 2.3
Historical Performance of main Sectors : GCC Countries
(% Growth Rates)

	1975-1985						1985-1990					
	Sec-2	Sec-3	Sec-4	Sec-5	Sec-6	GDP	Sec-2	Sec-3	Sec-4	Sec-5	Sec-6	GDP
Bahrain	-19.7	-11.7	4.5	1.9	7.7	5.3	3.2	5.5	-3.4	0.7	-4.9	4.8
Kuwait	-20.2	0.5	-2.6	-0.2	1.3	7.6	-2.5	5.9	-0.9	0.9	5.3	-3.0
Oman	-19.4	2.9	-2.8	2.2	2.5	11.2	-6.3	1.0	-2.6	1.3	-1.3	0.8
Qatar	-25.0	4.5	-1.7	0.3	0.1	2.1	-8.4	3.7	-1.4	0.8	7.0	3.9
S. Arabia	-29.8	2.8	7.6	5.4	3.1	2.2	-0.7	-0.2	-4.0	-2.3	-1.4	5.0
UAE	-21.8	8.4	-2.0	3.3	4.9	10.4	1.4	-2.1	-0.8	0.3	-3.9	1.9
Average GCC	-22.6	1.3	0.5	2.1	3.3	6.4	-2.2	2.3	-2.2	0.3	0.1	2.2

	1990-1995						1975-1995					
Bahrain	-4.1	-1.7	0.4	2.0	1.8	-1.1	-10.6	-7.9	1.2	4.6	4.5	4.0
Kuwait	-4.3	-3.5	1.1	-2.3	1.1	-2.3	-30.0	0.9	-2.7	-1.6	-0.5	1.9
Oman	-2.6	0.2	0.2	1.9	2.1	-0.7	-28.3	4.1	-5.2	5.4	-0.7	4.9
Qatar	-2.4	0.4	0.2	0.7	2.0	3.5	-35.8	8.6	-2.9	1.8	-0.3	2.1
S.Arabia	-3.0	0.7	0.5	0.1	-0.7	1.2	-43.5	3.3	4.1	3.2	4.7	3.1
UAE	-14.3	2.5	0.7	-2.0	2.2	3.9	-34.7	9.0	-2.1	1.5	2.7	6.9
Average GCC	-5.2	-0.2	0.5	0.1	1.3	1.0	-30.5	3.0	-1.3	2.5	1.7	3.8

Sec-2: Oil & Mining Sec-3: Manufacturing (including petrochemicals) Sec-4: Construction
Sec-5: wholesale & retail trade Sec-6: Bank &Insurance

Table 2.4
Demand Structure in the GCC: 1975-95
Constant 1985 Prices

	Overall Population (m)			Indigenous Working Population (ths.)			Private Investment ($Bil)			Private Consumption ($Bil)			Government Spending ($Bil)			Imports: Goods Services ($Bil)		
	1975	1985	1995#	1975	1985	1995#	1975	1985	1995	1975	1985	1995	1975	1985	1995	1975	1985	1995
Bahrain	0.26	0.42	0.53	39	68	101	0.66	1.17	1.43	1.19	1.62	2.11	0.34	0.81	1.06	1.19	3.10	3.87
Kuwait	0.87	1.10	1.21	91	127	172	3.85	4.57	2.68	4.81	11.2	6.21	1.26	4.22	5.19	2.39	6.47	6.67
Oman	0.55	1.24	2.00	86	136	189	1.18	2.82	2.95	1.04	4.09	3.35	1.08	2.99	4.22	0.68	2.16	8.37
Qatar	0.27	0.35	0.54	13	22	27	1.36	1.43	1.06	1.23	1.76	1.94	1.31	1.83	2.76	0.42	1.04	1.89
S Arabia	4.61	11.3	16.9	919	1354	1985	4.67	19.8	28.6	11.5	41.4	52.5	8.66	32.7	50.5	4.22	20.7	21.5
UAE	0.42	1.34	1.68	45	65	87	3.63	6.77	9.01	3.15	8.68	16.7	1.03	3.63	4.54	2.67	6.13	19.7
GCC	6.98	15.8	22.9	1193	1772	2561	13.99	36.56	45.73	22.9	68.7	82.8	13.7	46.2	68.3	11.6	39.6	62.0
AAGR@	7.2	12.6	4.5	5.3	4.8	4.4	8.3	16.1	2.5	21.1	20.0	2.1	24.4	23.7	4.78	26.7	24.1	5.6
% GDP	----	-----	-----	----	-----	-----	11.2	20.8	22.5	18.3	39.1	40.8	10.9	26.3	33.7	9.3	22.5	30.5

Estimates based on several surveys of the region's population.
@ average annual growth rate. The AAGR for 1975 entry is based on period 1973-75.

Sources: DataStream, and the GCC countries *National Accounts*, various years.

Table 2.5
Sources of Exports of Goods and Services: GCC
Constant 1985 Prices

	Crude Oil ($ Bil)			Agricultural Products ($ mil)			Manufacturing Products ($mil)			Chemical & Petro-chemicals ($mil)			Other Products & services ($Bil) @			Total Exports ($ Bil)		
	1975	1985	1995	1975	1985	1995	1975	1985	1995	1975	1985	1995	1975	1985	1995	1975	1985	1995
Bahrain	1.25	2.55	3.04	1.34	2.93	28.2	89.9	252	597	68.8	256	301	3.22	9.81	19.8	4.8	15.8	23.8
Kuwait	6.85	9.56	11.2	98.8	94.0	32.5	86.3	253	66.4	64.6	94.7	54.6	1.81	5.11	11.3	8.8	14.2	24.7
Oman	2.12	4.15	4.33	38.8	58.1	90.5	14.7	30.7	78.8	1.11	3.30	52.2	0.53	0.61	0.82	2.6	4.7	5.9
Qartar	0.97	1.53	2.54	n.a	0.54	8.22	n.a	130	187	n.a	8.81	15.5	0.89	1.33	1.92	2.2	3.2	4.3
S. Arabia	16.1	24.9	35.8	35.6	59.9	412	56.6	95.5	478	675	898	2877	12.2	21.4	5.54	30.3	48.1	43.3
UAE	6.32	10.9	16.2	12.2	18.5	98.8	89.1	261	885	18.1	37.7	103	2.88	8.92	8.03	9.3	17.3	23.8
GCC	34	54	73	187	203	670	394	1022	2292	798	1300	3403	21	47	47	57	103	126
AAGR	7.8	5.9	3.5	7.2	8.5	23.0	18.0	16.0	12.4	4.3	6.3	16.1	10	12	0	11.0	8.0	2.2
T.E %#	60	52	58	0.32	0.20	0.53	0.69	1.00	1.82	1.33	1.26	2.71	37	45	37	100	100	100
GDP%	27	30	36	0.14	0.11	0.33	0.31	0.58	1.13	0.63	0.74	1.68	17	27	23	45	58	62

@ includes banking and insurance services, food, drink and tobacco.
# as % of total exports

Sources: *National Accounts*, GCC countries, various years. DataStream.

Table 2.6
Analysis of Government Finances: the GCC
Constant 1985 Prices

	Total Spending ($Bil)			Spending as % GDP			Total Revenue ($Bil)			Oil Revenue as (%) of Total Revenue			Budget ($Bil)		
	1975	1985	1995	1975	1985	1995	1975	1985	1995	1975	1985	1995	1975	1985	1995
Bahrain	0.34	0.81	1.36	12.8	21.8	22.1	0.36	1.36	1.39	78	70	63	0.02	0.55	0.03
Kuwait	3.16	10.1	13.6	23.1	49.1*	51.1	5.12	7.78	9.44	91	88	85	1.96	-2.32*	-4.16
Oman	1.38	3.29	5.02	19.8	25.8	38.0	2.48	4.58	4.35	89	82	75	1.10	1.29	-0.67
Qatar	1.31	3.03	3.36	21.1	30.0	40.1	1.88	3.14	2.67	n.a	87	82	0.57	0.11	-0.69
S Arabia	8.66*	32.7*	50.5*	10.2	31.8	40.7	29.2*	36.7*	43.3*	73	66	74	20.5*	4.02*	-7.21*
UAE	1.03	3.63	4.54	7.93	13.7	14.6	1.12	4.12	4.25	87	83	76	0.09	0.49	-0.29
GCC	15.7	53.1	78.9	----	----	----	40.2	57.7	65.4	----	----	---	24.2	4.14	-13.5
Average	2.59	8.78	13.1	15.6	28.7	34.4	6.70	9.17	10.9	85	79	75	4.04	0.69	-2.16
St. Error	2.77	12.2	18.2	5.62	8.71	11.3	10.3	12.1	14.5	7.1	8.3	7.1	7.35	1.91	2.59
AAGR % @	25.8	23.9	4.92	10.8	8.34	1.98	12.2	3.68	1.88	3.0	-0.7	-0.4	3.92	-8.3	-41.3

@ average annual growth rate. Entry under 1975 relates to period 1973-75.
* Significantly different from mean values at the 5% level.

Sources: Datastream, and *National Accounts*, the GCC countries, various years.

Table 2.7:
GCC Commercial Banks: Deposits, Capital, Assets and Liabilities

	Demand Deposits ($Bil)		Government Deposits ($Bil)		Total Deposits ($Bil)		Capital & Reserves ($Bil)		Liability/Asset Ratio (%)	
	1985	1995	1985	1995	1985	1995	1985	1995	1985	1995
Bahrain	0.43	0.72	0.64	1.10	2.83	3.99	0.45	0.47	22	41
Kuwait	1.88	2.23	1.28	0.33	14.9	18.8	2.82	3.36	61	57
Oman	0.43	0.62	0.63	0.67	2.71	3.55	0.28	0.37	37	23
Qatar	0.79	0.81	0.13	1.18	2.93	5.23	0.65	1.12	36	48
S Arabia	13.3*	18.8*	1.42	0.79	32.1*	39.1*	3.26	8.12	14	31
UAE	1.72	3.46	1.21	5.89	13.9	23.3	3.89	4.82	45	40
Total GCC	18.6	26.6	5.31	9.96	69.4	93.9	11.3	18.3	---	---
Average	3.10	4.43	0.88	1.66	11.5	15.6	1.89	3.05	36	40
St. Error	4.52	6.51	1.31	4.07	10.6	10.5	1.46	2.76	15	11

* Significantly different from the average value at the 5% singnificance.

Source: GCC *National Accounts*, various years. Datasteam.

Table 2.8
Annual Growth Rates in Money Supply and Inflation: The GCC
(%)

	BAHRAIN				KUWAIT				OMAN			
	M0	QM	M2	RPI	M0	QM	M2	RPI	M0	QM	M2	RPI
1975-80	1.09	0.52	0.65	4.59	24.7	42.6	36.8	1.49	19.3	44.6	29.3	12.7
1981-85	6.76	1.73	1.39	2.41	-4.6	35.3	36.1	0.41	10.3	46.9	29.0	8.59
1986-90	1.96	1.66	1.43	0.86	-0.7	28.7	27.8	1.64	3.85	39.6	28.7	0.25
1991-95	2.70	1.92	1.45	-1.85	3.75	26.5	23.1	2.10	4.20	41.4	31.9	-2.61
Average	3.13	1.45	1.23	1.50	5.79	33.3	30.9	1.41	9.42	43.2	29.7	4.73
St Error	2.18	0.56	0.33	2.35	11.3	6.29	5.74	0.62	6.28	2.81	1.29	6.16
	QATAR				SAUDI ARABIA				U.A.E			
	M0	QM	M2	RPI	M0	QM	M2	RPI	M0	QM	M2	RPI
1975-80	16.9	43.1	28.0	6.41	56.4	73.6	59.9	3.12	17.6	21.6	20.2	1.45
1981-85	-2.48	36.8	24.3	4.21	1.18	80.3	43.4	1.78	1.94	12.9	13.1	4.52
1986-90	-1.93	31.1	19.7	3.70	4.71	79.3	29.7	2.36	3.39	21.9	19.1	4.69
1991-95	2.40	26.5	16.3	2.21	1.65	78.8	21.5	-1.74	10.6	23.9	19.5	6.67
Average	3.71	34.3	22.1	4.13	15.9	78.1	36.4	1.38	8.39	20.0	17.9	4.33
St Error	7.82	6.24	4.47	1.51	23.4	2.61	14.6	1.86	6.25	4.31	2.83	1.87

Source: Datastream. *National Accounts*, GCC.

Table 2.9
Direction of Trade: The GCC
intra-GCC exports as % of total exports

	Intra-GCC		Japan		USA		EU		Others		Total ($B)	
	1985	1995	1985	1995	1985	1995	1985	1995	1985	1995	1985	1995
Bahrain	12.1*	28.1*	9.2	12.3	2.8	2.8	3.7	7.7	72.2	49.1	15.8	23.8
Kuwait	4.1	4.8	10.9	37.4	1.8	9.7	33.5	27.3	49.7	35.3	14.2	24.7
Oman	3.1	9.3	56.5	32.0	1.0	3.3	2.7	3.1	63.3	52.3	4.7	5.9
Qatar	4.5	8.0	61.6	58.9	0.5	2.0	16.1	8.2	17.3	22.9	3.2	4.3
S Arabia	4.9	2.2	30.5	19.5	5.4	21.5*	24.2	23.8	35.0	33.0	48.1*	43.3
UAE	7.0	5.0	44.0	47.0	4.0	4.0	8.0	9.0	37.0	34.0	17.3	23.8
Average	**5.9**	**9.6**	**35.4**	**34.5**	**2.6**	**7.2**	**14.7**	**13.2**	**45.7**	**37.8**	**17.2**	**20.9**
St Error	**2.8**	**8.6**	**20.1**	**15.6**	**1.7**	**6.9**	**11.5**	**8.9**	**18.7**	**10.9**	**14.9**	**13.1**
AAGR %		**6.3**		**-0.2**		**17.7**		**-1.0**		**-1.7**		**2.1**

intra-GCC imports as % of total imports

	Intra-GCC		Japan		USA		EU		Others		Total ($B)	
	1985	1995	1985	1995	1985	1995	1985	1995	1985	1995	1985	1995
Bahrain	42.7*	45.9*	6.8	5.7*	3.7	13.2	19.3*	23.3	27.5	11.9	3.10	3.87
Kuwait	2.9	8.4	26.3	14.1	9.3	24.4	33.4	38.7	20.1	14.4	6.47	6.67
Oman	22.8	23.7	20.2	17.7	5.6	5.2	36.7	17.9	14.7	35.5	2.16	8.37
Qatar	4.9	9.6	18.1	14.4	6.5	9.3	44.2	32.5	26.3	34.2	1.04	1.89
S Arabia	2.1	1.6	18.9	15.2	16.9*	22.4	40.8	40.2	23.3	20.6	20.7*	21.5
UAE	5.0	6.0	15.1	16.2	8.0	7.0	32.0	33.1	39.5*	37.6	6.13	19.7
Average	**13.4**	**15.8**	**17.5**	**13.9**	**8.3**	**13.6**	**34.4**	**30.9**	**25.2**	**25.7**	**6.6**	**10.3**
St Error	**14.6**	**15.0**	**6.1**	**3.6**	**4.1**	**7.2**	**7.8**	**8.1**	**7.2**	**10.5**	**6.4**	**7.4**
AAGR %		**1.8**		**-2.1**		**6.3**		**-1.0**		**0.2**		**5.6**

Source: see tables 1.7 and 1.8.

Table 2.10
Contribution of exports of manufactured products to non-oil intra-GCC exports

	export of manufactured products ($mil)		export of manufactured to total non-oil exports (%)		total intra-GCC trade ($mil)		manufactured exports to total intra-GCC trade (%)	
	1985	**1995**	**1985**	**1995**	**1985**	**1995**	**1985**	**1995**
Bahrain	55	165	99	98	1720	1110	4.2	7.0
Kuwait	184	104	98	99	340	1222	6.1	7.1
Oman	22	125	45	81	663	1384	2.1	6.3
Qatar	84	233	90	84	212	452	12	20
S Arabia	71	787*	41	68	2232	4913*	8.8	29
UAE	243	284	95	75	1424	3212	23*	30
Total GCC	**659**	**1698**	**—**	**—**	**6591**	**12294**	**—**	**—**
Average	**110**	**283**	**78**	**84**	**1098**	**2049**	**9.4**	**16.5**
St Error	**108**	**210**	**25**	**12**	**732**	**1102**	**6.8**	**10.2**

Source: IFS, several issues. Datastream.

Fig 2.1 Bahrain: Government Balance as % of GDP

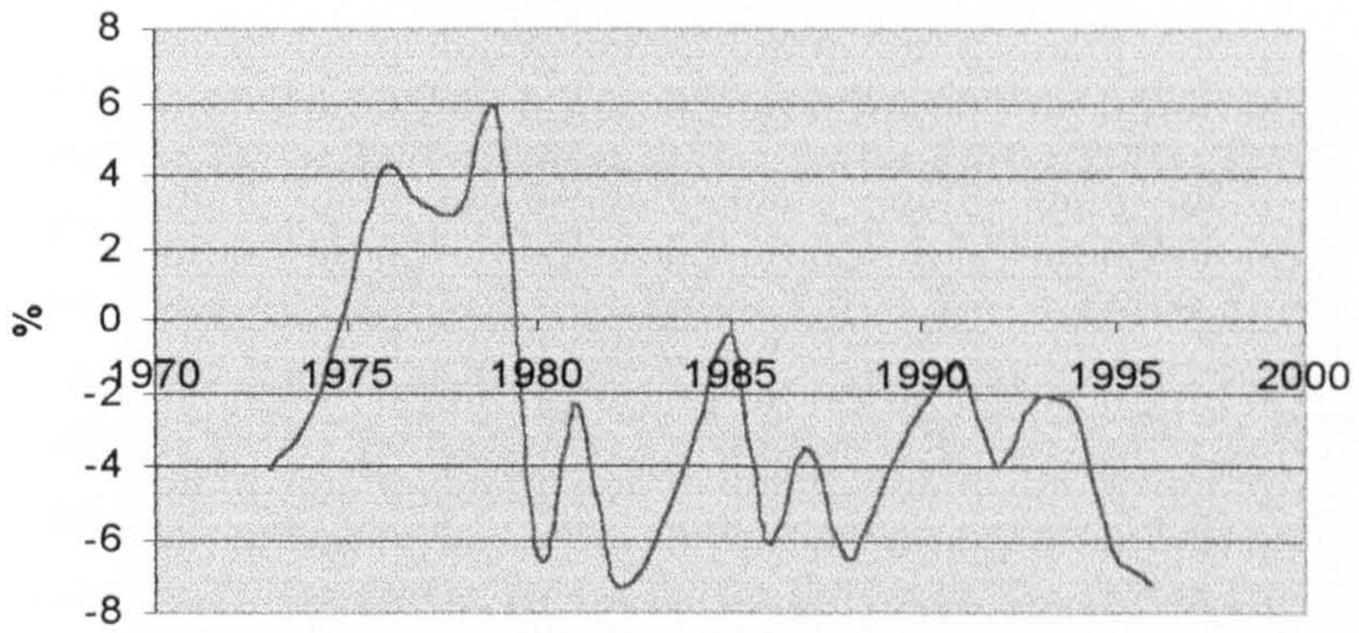


Fig 2.2 Kuwait: Government Balance as % of GDP

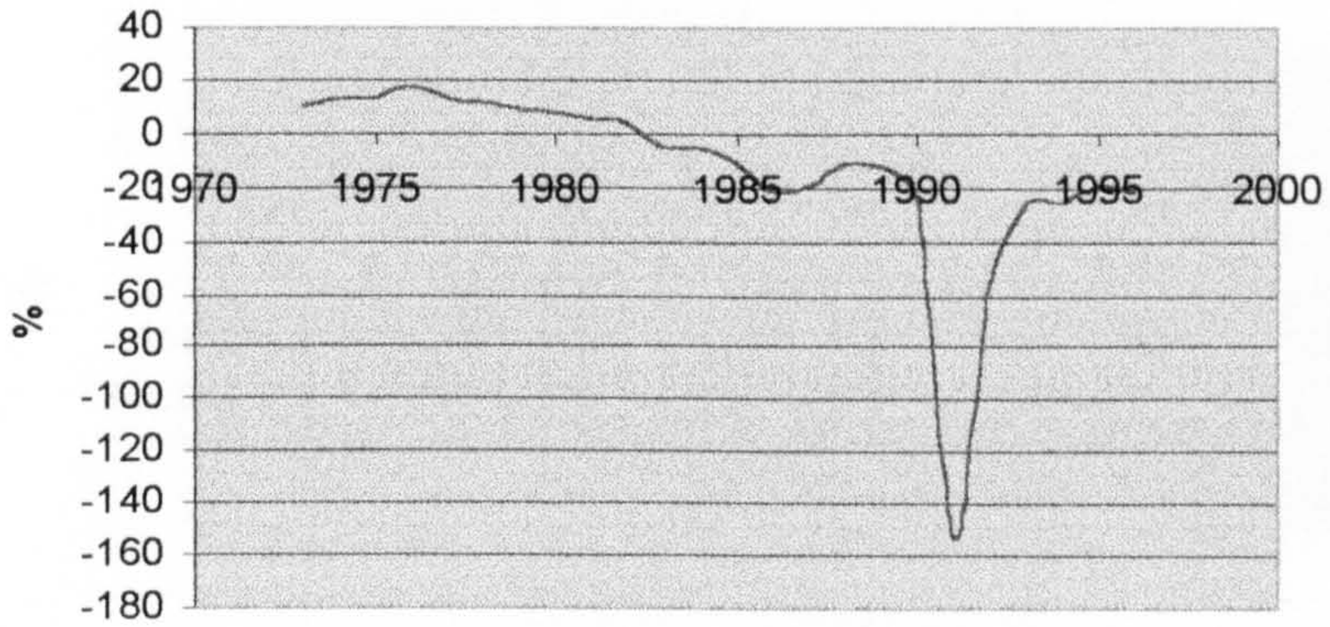


Fig 2.3 Oman: Government Balance as % of GDP

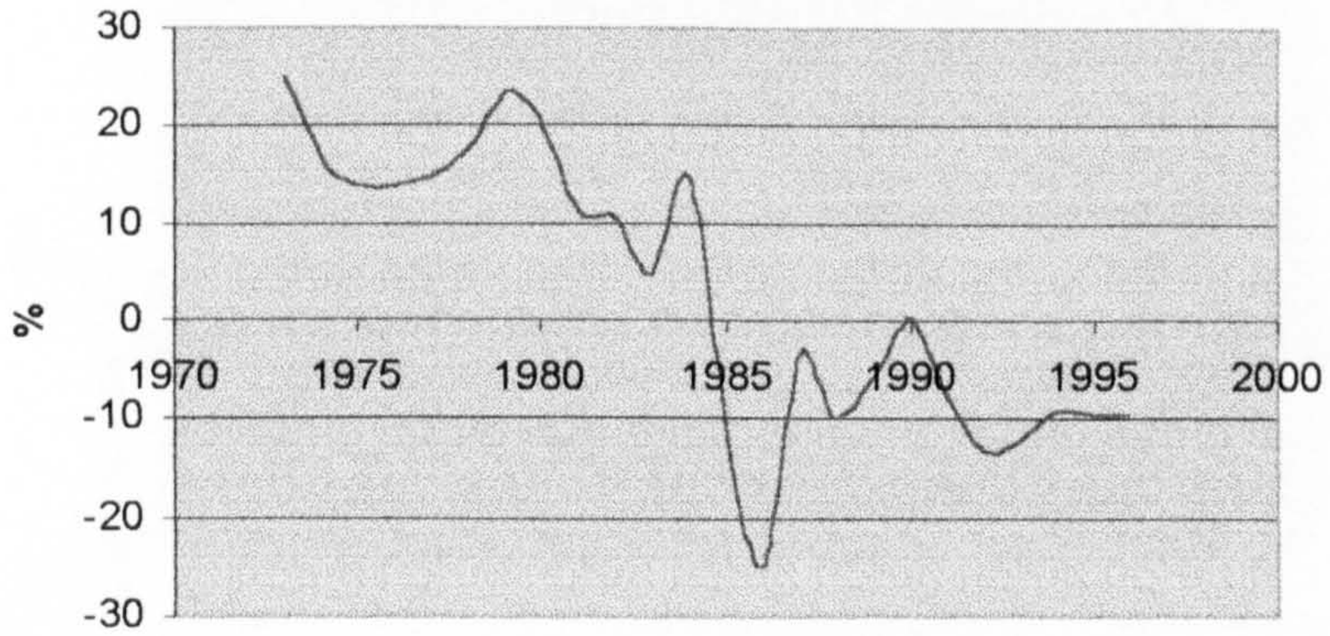


Fig 2.4 Qatar: Government Balance as % of GDP

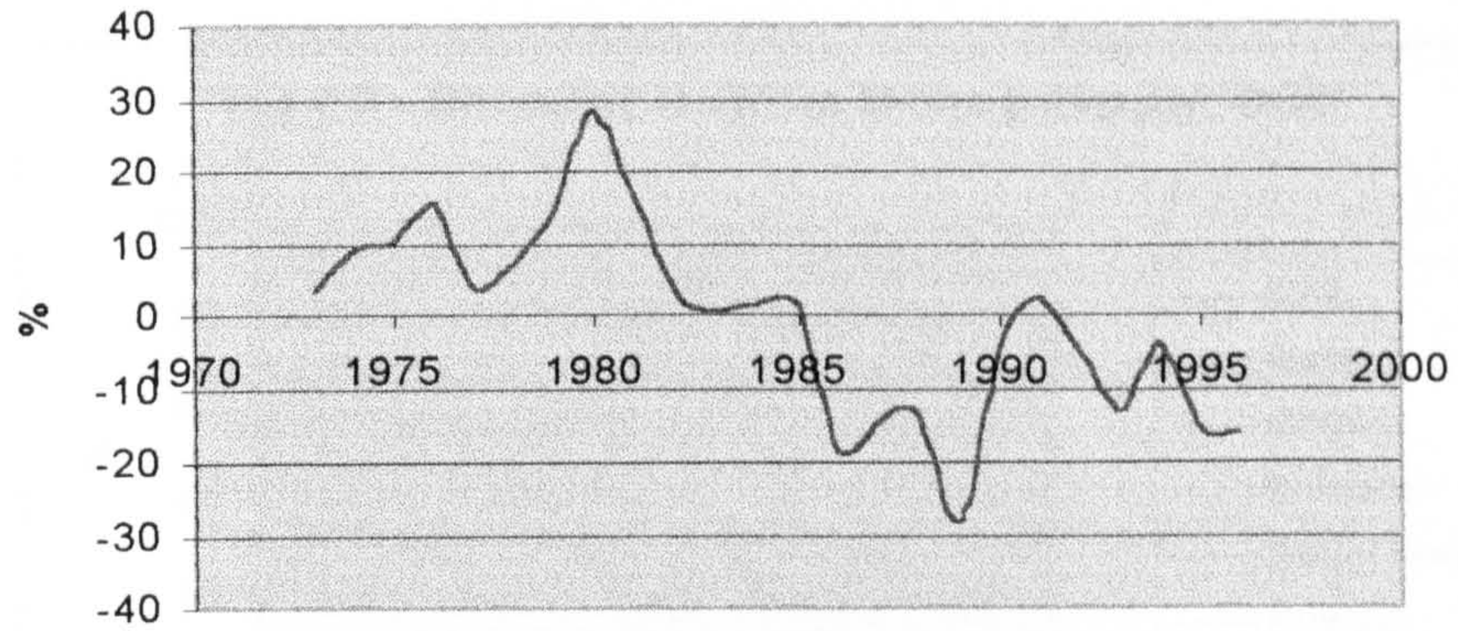


Fig 2.5 Saudi Arabia: Government Balance as % of GDP

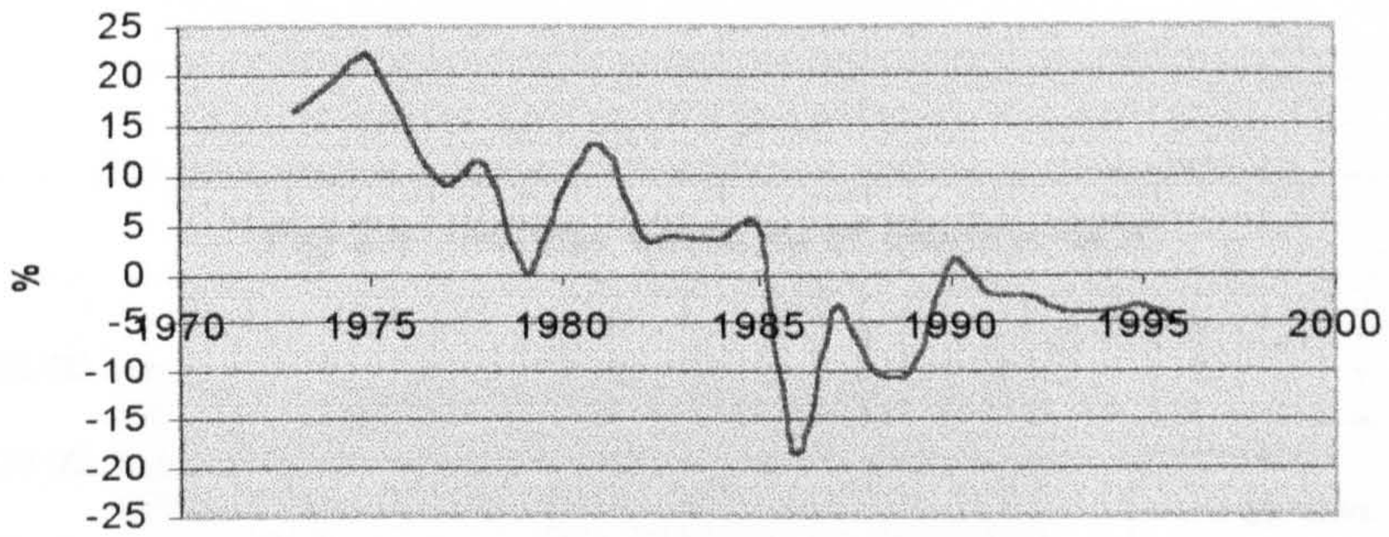


Fig 2.6 UAE: Government Balance as % of GDP

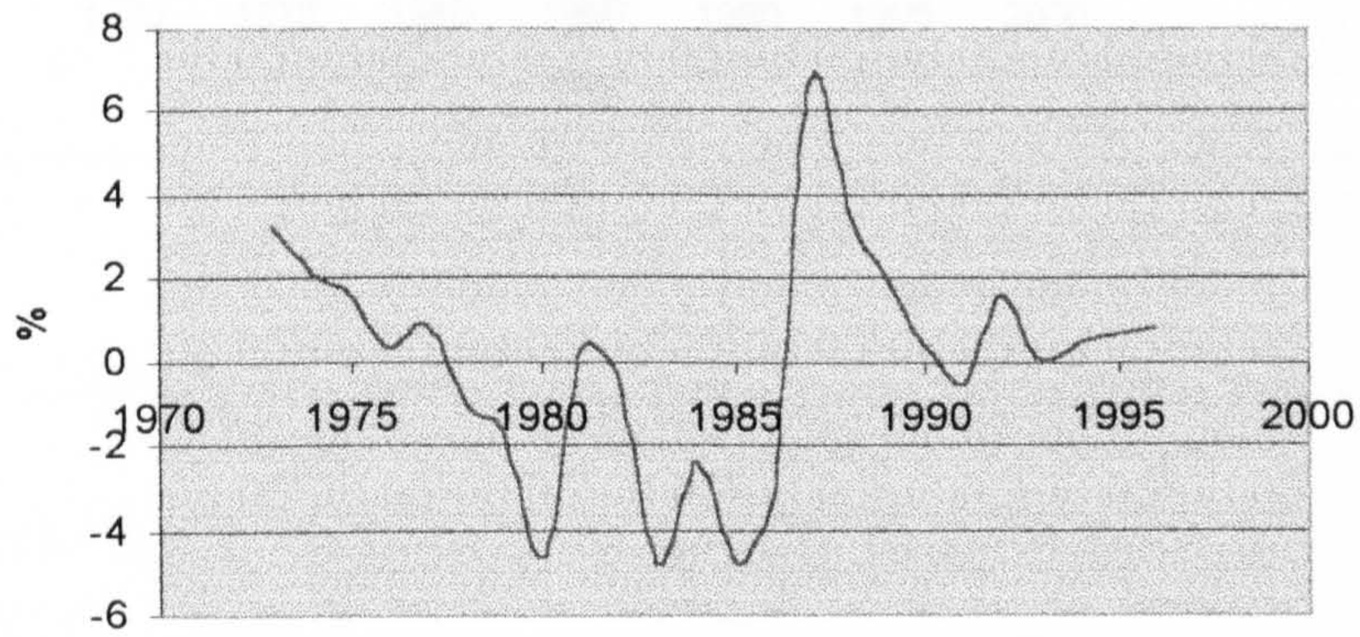


Fig 2.7 - Share of M_0 from Money supply: GCC

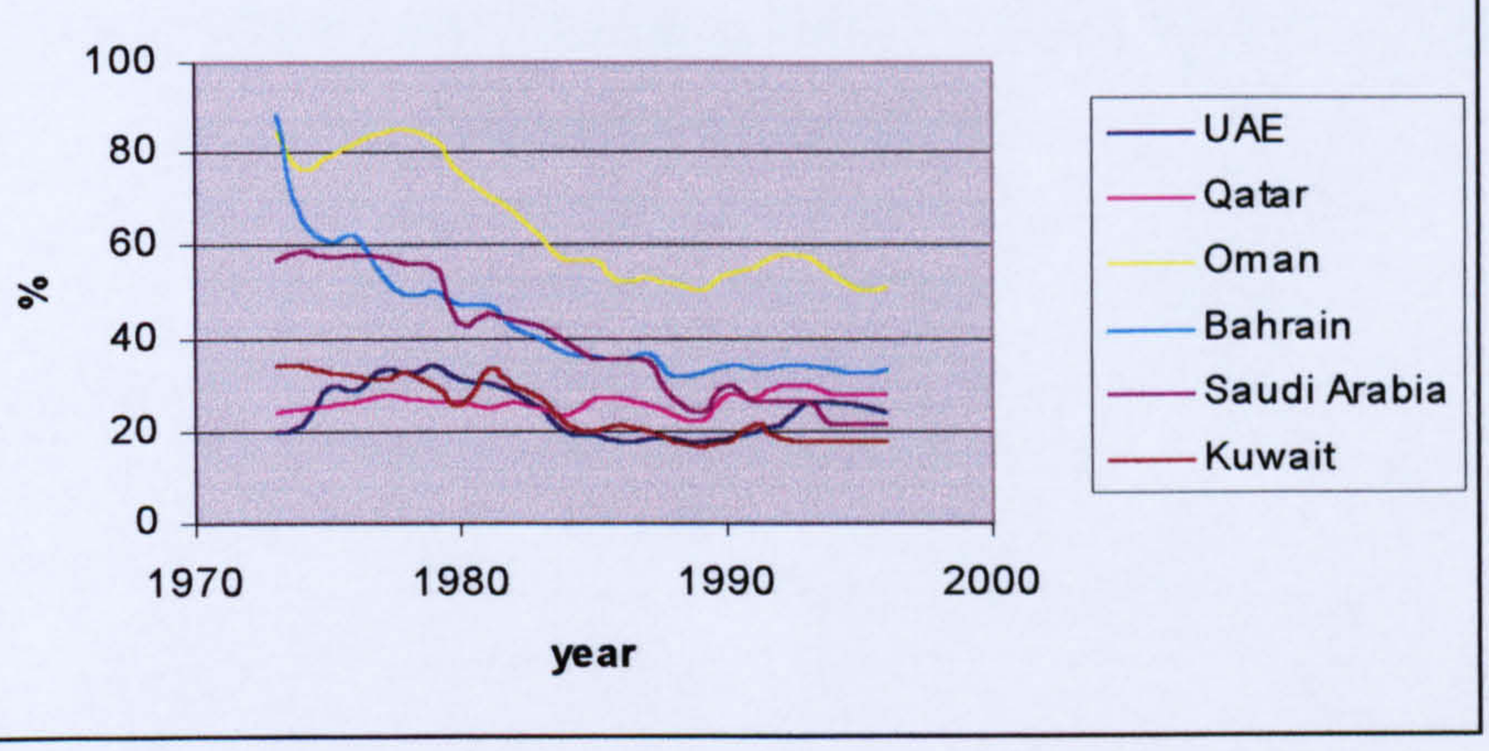
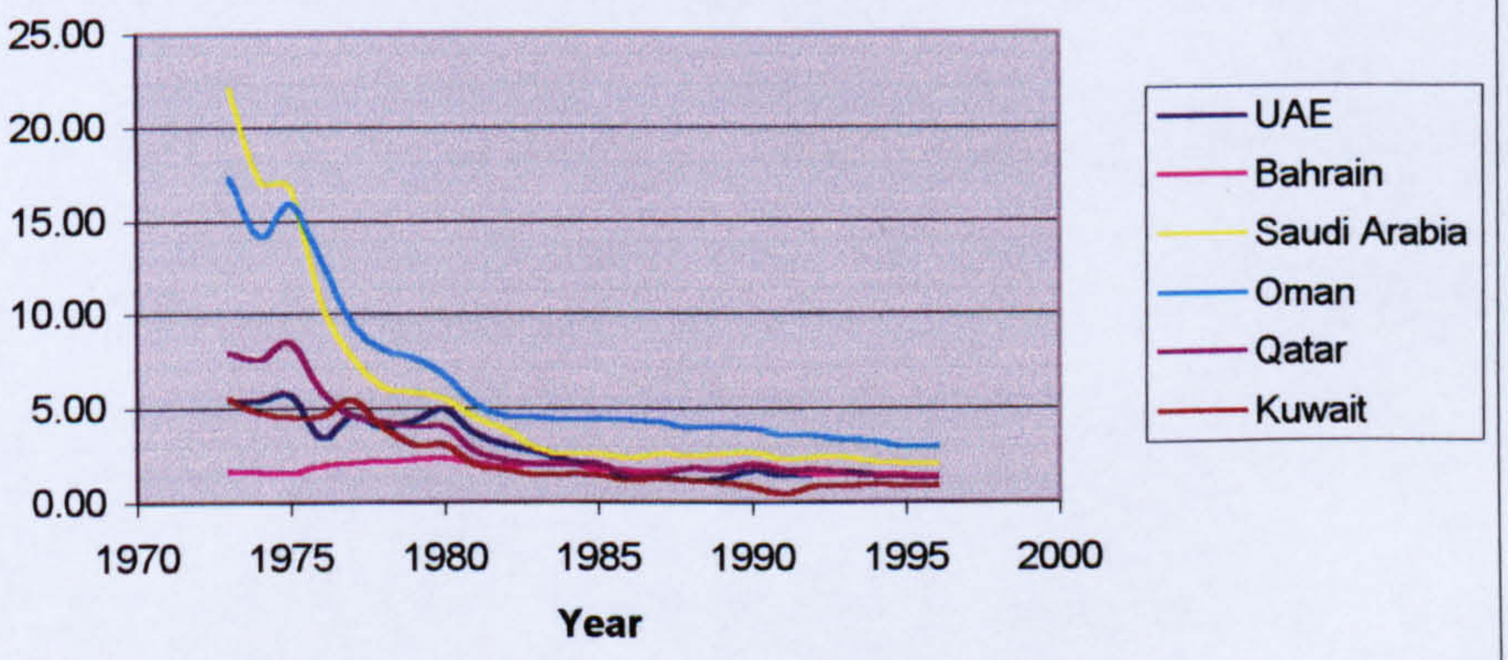


Fig 2.8- Income Velocity of Money: GCC



CHAPTER THREE

ECONOMIC INTEGRATION: THEORY AND MEASUREMENT

> *The purpose of a customs union or of a free-trade area should be to facilitate trade between the constituent territories and not to raise barriers to the trade of other contracting parties with such territories.*
>
> GATT Article XXIV (4)

3.1 Introduction

Over the past few years there has been a series of significant contributions to analysing the real impact of economic integration, primarily aimed at assessing the costs and benefits of moving towards a more advanced form of regional economic harmonisation. One of the most comprehensive and substantive works entitled *The costs of non-Europe*, was carried out by Emerson et al (1988) where a large number of attributes of integration in a more general equilibrium approach were investigated. Moreover, the European Commission (1990) *One Market, One Money*, though being less precise, still addresses the main problems involved. The IMF (1990, 1992) contributions, *inter alia*, in evaluating the impact of fiscal and monetary coordination in the EC have been mainly based upon the use of *Multimod* – developed by Masson et al - a comprehensive system of

equations for the world economy. The latter attempts to measure a set of parameters or cross elasticities, which relate activity of one nation to another and then proceed with simulation on the basis of such estimates. This procedure would enable researchers to measure the real costs and benefits of integration relative to those of an interdependent world.

The justification for any regional economic integration is primarily based on the very assumption that such formations lead to net positive trade creation at zero/negligible cost to the rest of the world. Trade creation (TC), in a sense, refers to the replacement of the expensive domestic production by cheaper imports from the partner. On the other hand, if the partner's imports are more expensive than those of the world's, then trade diversion (TD) has occurred. In short, any form of economic integration[1] should entail economic gains for participating parties: relative prices expected to fall and incomes expected to increase. This is to say that in the long run, the member countries are expected to enjoy lower and more stable inflation rates. However, in the short/medium term, general prices may not necessarily fall, but depending on the nature of trade, some sectors of the economy in which tariffs are cut may experience lower prices relative to the rest. So, as pointed out by Kreinin (1961), unless

every sector's relative prices examined, the sole examination of general prices over time can be misleading and is subject to severe biases.

Such favourable movements in the terms of trade and of scale economies are difficult to be disentangled from feedback on to income and activity. In other words, integration should enhance the real growth rate of GDP via increased productivity and increased investment, rather than giving a one-off shift in welfare gain. Once again, amongst many, investigations made by Krause (1968) and Mayes (1978) suggest that it is a rather difficult task to distinguish between changes in GDP attributable to integration and those attributable to other causes.

If economic integration were treated like any other change in exogenous or policy variables in a macro model, then the correct econometric approach would be to estimate a large enough model to reflect all the relevant and important influences in the economy. Given a large number of observations, one would apply the model to both pre-and-post integration periods to estimate the structural parameters, and then observe any possible significant differences, which may have occurred on values of such parameters. The difference between the two estimates is then regarded as the identifiable effects of integration. Alternatively, if the

sample size is relatively small, a series of dummy variables may be used to take account of post integration period. In such a case, although the size of TC may not be measured, the statistical significance of post integration can be tested. Nevertheless, the major drawback to such large macro models is the problem of aggregation. As has been noted, amongst many, by Barker (1970), in an industrialised economy both price and substitution elasticities of demand for imports vary considerably over different commodities, running from near zero price elasticities for essential commodities which cannot be produced locally, to substantial values for manufactured products for which there are many close substitutes. Moreover, level of tariffs and changes in them may vary quite considerably from sector to sector, so by taking a uniform value across all trade could be seriously misleading. So, disaggregation is relevant to the problem, but in most cases lack of data availability at sectoral level has discouraged researchers to pursue the problem any further.

Alternatively, as used by many[2], a simple logarithmic import function in prices and incomes can, to a limited extent, show the direct price effect of integration, and can allow for substitution between imports from partners and non-members as well as substitution between imports and domestic products to be incorporated. However, as has been reiterated by Mayes

(1997), such simple models would fail to encapsulate the impact caused by other factors in the economy. For example, exports will in any case be affected by the change in tariffs in partner countries after the formation of, say, a Customs Union. This is because imports directed both to final and intermediate demand will tend to lower the rate of price inflation, and this in turn will have consequences for the wage rate through the usual inflationary spiral and for the price of exports and hence export demand. The model, therefore, must be able to take account of the effects of increased imports on domestic output, which will in turn have a deflationary effect on domestic demand. It is thus suggested that at the very least such models should incorporate some balance of payments / exchange rate relation.

The advantages of simple models are clear and have been well documented by Kreinin (1979). Even with a more sophisticated model, as has been pointed out by Mayes (1997: 80), one can only get a rough idea of an order of magnitude not an accurate single number. Hence if it is possible to use only a relatively limited amount of readily available information to estimate the magnitude, one can make much more efficient use of resources by adopting the simple model.

In short, no matter what model is adopted, we need to be able to explain imports and exports disaggregated at the very least by trading area and usually by country as well if we are to obtain estimates of trade creation and trade diversion, and the effects on the balance of payments and welfare. Ideally, such models should be able to be applied at disaggregated level over sectors and commodities.

3.2 Theory of Customs Union: A Review

As has been argued by Brown (1961) and further enhanced by Balassa (1962) and El-Agraa and Jones (1981), most LDCs tend to benefit most from economic integration, if the initial formation is based on a CU rather than a Common Market. As a common external tariff (CET) needs to be agreed by the members of CU, then an agreed set of fiscal coordination would enrich the working of the union. To elaborate this, let us summarise the example used by El-Agraa and Jones (1981: 35-46) in which TC and TD emerging from a three-country CU have been evaluated. Suppose, initially, that the following conditions hold for three countries trading with each other:

$$P_1 < P_3 (1+T_1) \qquad (3.1)$$

$$P_1 < P_2 (1+T_1) \qquad (3.2)$$

$$P_2 < P_3 (1+T_2) \quad (3.3)$$

$$P_2 < P_1 (1+T_2) \quad (3.4)$$

where Ps represent the unit price of a particular commodity in three exclusive and mutually exhaustive countries (areas) of the world, with 1 and 2 as potential CU partners and 3 as the rest of the world (W); and Ts are the *ad valorem* tariff rates levied on imported finished products by these three countries. The conditions (3.1) and (3.2) ensure that country 1 is producing enough to satisfy its domestic demand; where (3.3) and (3.4) ensure the same outcome for country 2.

Suppose now that countries 1 and 2 form a CU and adopt a CET equal to the unweighted arithmetic average of their initial tariff rates, i.e. $[(T_1+T_2)/2 = T_{CET}]$. If T_2 is initially lower than T_1, then the former must rise as a consequence of the adoption of T_{CET}. Since, P_2 is less than $P_3(1+T_2)$ and less than P_1, P_2 can never be higher than $P_3(1+T_{CET})$ at the same time. Hence, the only possible outcome is that country 1 will import this commodity from country 2 after the formation of the CU. This is what we refer as trade creation. Similar outcome is obtained when $T_1 < T_2$.

Now let us consider the case where conditions only (3.2) and (3.3) and the following condition hold initially:

$$P_1 > P_3 (1+T_1) \qquad (3.5)$$

Once again, if countries 1 and 2 form a CU and $T_1 < T_2$ initially, then T_1 must rise and T_2 must fall to the CET level. Under such circumstances, T_2 cannot fall to such an extent as to reverse condition (3.3), since this would imply that $P_2 > P_1$, which is ruled out by condition (3.2). Hence condition (3.3) must still hold true. As it is clear, if subjecting T_1 and T_2 to T_{CET} does not lead to a reversal of either condition (3.5) or (3.3), trade diversion will take place particularly since $P_1 > P_3 (1+T_{CET})$, $P_2 < P_3 (1+T_{CET})$ and $P_2 < P_1$. A more interesting outcome is where a higher T_1 does not reverse condition (3.5) but the lower T_2 reverses condition (3.3). In such circumstances, country 1 will continue to import from W and country 2 will now give up its costly domestic production and import from W. This is so called *external trade creation*, which can only occur in the case of CU formation.

Finally, if we assume that only condition (3.5) and the following condition hold:

$$P_2 > P_3 (1+T_2) \qquad (3.6)$$

then in the case of $T_1 > T_2$ the price of this commodity in country 1 will exceed that of country 2. In this case, as it is apparent both countries must be importing directly from W. However, if they wish to form a CU, T_1 will have to fall and T_2 will have to rise in order to have a CET. In this case, the price of this commodity in both countries will be identical, that is [$P_1 = P_2 = P_3 (1+T_{CET})$]; indicating that both will continue to import this commodity directly from W. Interestingly, in the case where the two countries formed a FTA, then this phenomenon is termed as *trade deflection*, meaning that the country that initially imported directly from W now imports indirectly from the W via the partner with the lower tariff rate. As it is apparent, deflection of production and investment can also occur when both partners are producing the same commodity initially. It can therefore be argued that in one respect the formation of a CU will eliminate the tariff differential and will then dispose of the possibility of deflection.

Besides the static effects already discussed, the CU establishment can also lead to dynamic effects. As argued earlier, CU may influence growth in member states through economies of scale, increased competition and stimulation of investment and technical change. These simple analyses, based on competitive market with no distortions, have been well collated

and illustrated in Mikic (1998: 445-459). Once again, these influences would be expected to lead to higher growth and lower relative prices in the member states.

As it is now apparent, agreement on formulating CETs for several commodities in a CU will entail a significant loss or redistribution of governments revenues, consumption and production. In the case where a large number of countries forming a CU then this procedure would necessitate a coherent and consistent fiscal coordination amongst the members, so that redistribution of wealth and welfare are maintained *vis-à-vis* the better-off and the worse-off partners. In short, although the CU theory is based on microeconomics foundations, it lends itself towards a more macroeconomic policy orientation.

3.3 Customs Union vs Common Market

Analysis of regional integration based on CU assumes immobility of factors of production outside national boundaries. A common market, CM, differs from CU in that it involves the full integration of both product and factor markets through regional trade liberalization and elimination of

obstacles to mobility of factors of production. The description of CM thus specifies the harmonisation of regulations pertaining to such factor mobility, as well as tax and other related policies. Heckscher-Ohlin model of international trade advocates that an effective way to achieve Pareto efficiency is through perfectly free trade of goods and services, provided that the equalisation of commodity prices leads to factor-price equalisation. Free trade is not free of distortion, and hence factor prices cannot be equalised through free trade alone. As has been argued in Mikic (1998: 462) any degree of factor price differential between member states will result in a call for increased factor mobility to equlaise factors' marginal productivities. It can therefore be argued that perfectly free international factor movements will lead to factor-price equalisation. The CM, thus, involves a variant of both of these processes.

International capital mobility in Europe has a long history and goes back to the 13th century, when both governments and merchants were engaged in funding directly or providing capital for construction projects, public works, wars and voyages of discovery in different European countries.[3] The 1990s have seen most developed economies divorcing their domestic interest rates almost completely; hence international capital mobility has

increased to the point where the gap between many countries' short-term interest rates is often so small to ignore. In general, nowadays one country's short-term rate on government bonds tend to differ from another's only by a margin that matches foreign-exchange-market expectations of a change in the exchange rate between them.

In the spirit of Heckscher-Ohlin, if country A offers higher rate of return on capital than B, then in the absence of tax or migration costs, capital will flow from B to A in search of higher return. The process will continue until rates of return on capital are equalised. There will be upward pressure on wage rates in A, as the additional capital stock improves labour productivity; and downward in B, where the opposite happens. It may therefore seem that the capital-importing country, A, gains a great deal and that B ends up being the loser. However, this impression is false, as the owners of capital in B will earn profits on the capital that they have transferred to A. In fact, the flow of profit income from A to B will be in excess of the loss the B's domestic output.[4] In short, capital mobility will enhance both countries' national incomes.

Historically, there has been relatively little migration of labour between the developed economies. The world's most significant migration has

been due to wars, religious/ethnic problems, or political pressures. As the history of West European labour mobility suggests, an overwhelming size of migration, whether primarily motivated by economic considerations or not, have taken the form of emigration to other continents, rather than from one European country to another. As has been stated in Brenton et al (1997: 227-8), a combination of push and pull - the attraction of higher incomes abroad and depressed conditions at home - were important factors behind substantial emigration from Europe to the United States and South America. Moreover, when West European states have attracted immigrant workers since the World War II, it has not been, in the main, from each other. The same picture appears to have emerged in the GCC states where intra GCC labour mobility is highly insignificant compared to the size of immigrant workers who come from Asia and North Africa.

The theoretical analysis of international labour migration is similar to that of capital. In the absence of any capital movement, and no restriction on labour movements, we assume that the wage rate in country B is initially higher than in A. Higher wages in B attract workers to migrate from A to B. The reduction in A's labour force means a fall in its domestic output. Other thing being equal, the employers in A are now prepared to offer higher wages reflecting labour scarcity. The opposite occurs in B.

Therefore, those who gain are A's emigrants, the workers who remain in A, and B's capitalists. On the other hand, B's indigenous workers and A's capitalists lose. It can be concluded that the reallocation of labour in equalising its marginal product leads to increased world income. Bowen et al (1998: 523-5) have demonstrated that similar long run outcomes would emerge when one assumes unemployment in one country or minimum wage in another.

3.4 A Model of CU for GCC

A large proportion of literature developed in the area of economic integration to date is biased towards common markets in the advanced or industrial economies. The first rigorous attempt at an examination and an application of economic integration in the context of development was made by Brown (1961) and then subsequently by Newlyn (1965), Hazelwood (1967,1975), and Robson (1983, 1985). As far as the developing/less developed countries (LDC) are concerned, it is realised that the static resource reallocation effects of TC and TD have limited relevance. Generally, the theory suggests that there would be more scope for TC if the countries concerned were initially very competitive in production but potentially very complementary and that a form of CU would best lead to trade creation if partners conducted most of their

foreign trade amongst themselves. Nevertheless, most of the effects of integration in the LDCs are bound to be trade diverting, since most LDCs seek to industrialise at a time when practically all their industrial products are imported from either the advanced nations or the newly industrialised economies. Moreover, as has been highlighted and elaborated by Robson (1983) and Metwally (1979), an important obstacle to the development of industry in the LDCs is the inadequate size of their individual markets. It is therefore necessary for them to increase the market size so as to encourage optimum plant installations, hence the need for economic integration.

Considering what has been said so far, the GCC as a whole represent a special case of an LDC where the dilemma of diversification and industrialisation is not primarily away from agriculture, but from dependence on oil. Given the unit price of oil being relatively higher than that of an average agricultural product, then it is anticipated that the GCC members are considerably wealthier than the other developing countries. Hence, unlike other developing economies, the GCC is not expected to face any severe constraints on financing either their balance of payments or governments balances. This follows that any possible loss of earnings by any member of the GCC through fixing CETs would be small in

relation to governments' earnings from oil. Moreover, as discussed in Chapter Two, the GCC 's endowment of human capital is very limited, and hence the economy relies heavily on the contributions made by migrant work force. Nevertheless, it is believed that the international markets from which these workers being recruited are nearly perfectly competitive. In all the GCC countries income tax is zero and hence governments earnings are in main derived from oil revenues and other governments' ventures and duties.

As explained in Chapter Two, the GCC began their first steps towards unification in 1981. By the early 1982 all the trade impediments and tariffs were removed amongst the members and a large number of CETs for different commodities were formulated. According to the EIU (1996) such rates average around 4% in a narrow range of 2.5%-5%, much lower than those of EFTA and EU. It can therefore be argued that since the early 1980s the GCC have established a CU, and in the mid 1980s giving a full intra-GCC freedom of movement of factors of production. However, in practice, since a large number of migrant workers are given restrictive work permits, the perfect mobility of labour within each country and across national borders has failed to work in most instances.

On the basis the above observations, our aim here is to build a practical, simple and yet useful model of integration for the GCC which would enable us to examine any possible dynamic impact which have been caused by the integration. In addition, the estimated model should then be used for forecasting purposes, enabling one to predict whether any progression from CU to a form of a Common Market may be possible. In building such a model of five-country integration one needs to make the following assumptions about the GCC:

(i) Factors of production are nearly perfectly mobile within each country, but lack the freedom to move across national borders.

(ii) A large proportion of factors of production (labour mainly) are non-indigenous whom have been recruited from competitive international markets. So each member of the union has full access to this plentiful unutilised supply of factor of production.

(iii) Both imported and exported products markets are competitive. This needs to be tested later on, to determine the extent of sluggishness and adjustment in several production sectors.

(iv) There is zero income tax in each and every country of the union. Government earnings are thus derived from oil revenues, nationalised companies profits and excise duties. Thus, fiscal policies have very limited impact on the economy.

(v) Any product produced within the union is to be sold as a substitute for a product imported from the rest of the world; its price will be equal to the import price plus the CET.

3.5 Specification of the Models

Following what has been discussed earlier, the aim here is to measure the extent of the performance of the GCC over the period using simple but appropriate models. The following models will be used for estimation purposes.

3.5.1 Price Rigidity and Market Inertia

For the purpose of evaluating the extent of sectoral competition in each state of the GCC, a model of price rigidity and market inertia - following the methodological background in Stiglitz (1984) and formulated by Bergeijk et al (1994) - will be used of the form

$$P_t = a_1 + a_2 PM_t + a_3 Q_t + a_4 \Delta Q_t + u_t \qquad (3.7)$$

where Q and ΔQ represent capacity utilization and change in capacity utilization, respectively; P and PM are the sector's price, and the competing import price indices, respectively. The white noise error term is shown as u_t which follows all the classical features of a disturbance term.

By definition, the higher the relative size of the ΔQ parameter, the more sluggish is the market adjustment. More specifically, the market inertia criterion (mic) is given by the ratio $a_4/(a_3 + a_4) * 100$. In the case of complete hysteresis ($a_3 = 0$; mic =100%), neither excess capacity nor excess demand influences the product's price. Consequently, a severely depressed economy may experience accelerating price rises if its capacity utilization improves, no matter how low the level of capacity utilization. This means that demand and supply on the goods market may not equilibrate by means of price adjustment, as competition being absent. As has been highlighted by Blanchard and Kiyotaki (1987, 652-3) market inertia and malfunctioning influences key economic indicators such as prices, production, trade, investment and employment. As this is the consequence of a suboptimal allocation of resources. Moreover, a lack of price flrexibility influences the efficacy of policy instruments. These issues have been illustrated in Dixon and Rankin (1984) and Heijdra and Broer (1993).

On the other hand, if changes in capacity utilization do not influence price movement at all ($a_4 = 0$; mic = 0) hysteresis is virtually absent and adjustment is rapid as the price level reacts quickly to the level of capacity utilization. In this case, market flexibility is high and price allocates

resources in a very efficient way, and that being a central feature of a perfectly competitive environment.

In applying such a technique to GCC one should exercise care in establishing the extent of price control in a given sector. This is to say that in a number of markets where governments' subsidies offered, prices are significantly lower than the average world price, and hence the estimated mic may not represent the true picture of the extent of inertia in such markets.

3.5.2 Consumption Behaviour

To examine whether the overall demand has significantly increased over the post-GCC period, a general form of consumption function will be used of the following form

$$C = c\,(Yd, \Pi, R) \qquad (3.8)$$

where C is the real private consumption; Yd, Π and R represent the real disposable income, the consumer price inflation and, the market rate of interest, respectively. Of particular interest is the estimates of marginal propensity to consume (mpc) for both durable and non-durable goods for each country. These estimates determine whether propensity to consume has generally changed over the period. The consumption sensitivity to inflation and interest rates will then be examined by testing whether mpc

is correlated with Π and R. In addition, in order to measure the impact caused by GCC formation on consumption behaviour, we attempt to introduce a dummy variable to take account of this potential contribution.

3.5.3 Production Function

To examine improvements in labour productivity and factor elasticity, a linear version of the variable elasticity of substitution (VES) production function will be employed and applied to some selected sectors of the GCC. The conventional neo-classical form of such function – derived by Hildebrand & Liu (1965) - may be given as

$$Q = q\,(W, K/L) \qquad (3.9)$$

Where Q represents the logarithm of the average labour productivity; W and K/L are log of real wage rate, and log of capital labour ratio, respectively.

Factor elasticity is a good indicator of growth of a sector in a developing economy, since it indicates that replacement of labour by capital is expected to improve labour productivity, and hence the higher will be the growth of the sector. So, it is expected that both W and K/L be positively correlated with output and labour productivity. A dummy variable for the potential contribution of GCC formation will be added to the equation to measure this effect.

3.5.4 Money Demand Function

In order to examine whether demand for money in the GCC states has significantly changed, a conventional model of money demand based on neo-quantity theory is used. There are several factors, which are believed to affect money demand. Most researchers use real GDP as the constraint on private money holdings. In oil dominated economies, however, non-oil real GDP should be used instead, as oil revenues accrue to the GCC governments and thus have no direct impact upon the liquidity of the private sector. Domestic interest rates are also used to denote the opportunity cost of holding money. As discussed earlier, the GCC countries are open economies with relative capital mobility, and that means that international opportunity costs of holding money may also influence domestic money holdings much in the same way as domestic opportunity costs do. In short, both foreign interest rates and movements in exchange rates should also be considered in our money demand function. Moreover, price inflation plays an important role in any decision relating to demand for money. So, in its broad form, our model of demand for money – in line with that of Al-Mutawa and Darrat (1995) – may be expressed as follows:

$$MS = m\,(X, \Pi^{e}, Rd, Rf, E) \qquad (3.10)$$

Where MS refers to the desired real broad money balances; X, Π^e , Rd, Rf and E are the non-oil real GDP, expected inflation rate[5], domestic interest rates, foreign interest rates and the exchange rates, respectively. Theoretically, it is expected that MS be positively correlated with X, but negatively correlated with the rest of the independent variables. A dummy variable taking account of CU formation will be taken up here and added to the right hand side of the model to measure the contribution made through GCC.

3.4.5 Import Function

As it was explained in the early part of this chapter, import functions have been commonly used to measure the extent of trade creation within an integrated area, and trade diversion in respect of the world. A simple import function may be given as:

$$M_i = m\,(RP, E, Y) \qquad (3.11)$$

where M_i is the country/region's non-oil imports from the other members of the GCC. RP, E and Y are index of relative prices, exchange rates and real GDP, respectively. Lower RP is expected to promote imports and so are higher real incomes and higher real exchange rates. So, we expect to obtain negative sign coefficient for RP and positive sign coefficients for the variables Y and E. A dummy variable will be introduced here to

measure the impact caused by GCC formation on trade creation. Equation (3.11) therefore measures the extent of GCC intra-trade over time.

3.6 Data: Sources and Definitions

The data used here are on annual basis running from 1970 to 1999. With the exception of Saudi Arabia, most macro data relating to GCC countries prior to 1970 are expected to be inconsistent and unreliable. As is typical in most developing economies, the GCC being of no exception, time series data on quarterly basis, if and when they exist, are of dubious quality. It is only recently that the GCC central banks and other data agencies have begun collecting and constructing quarterly data on some selected macro indicators. At micro level, the available sectoral/industrial data only go back to mid 1970s in most cases and these should be treated with caution. Several sources of data have been used in construction of our data set. The main source for macro indicators are the IMF Financial Statistics and the United Nations Annual Bulletin. In addition, central bank bulletins of each state as well as secondary source of Data-Stream have been examined and cross checked with the former sources. All the intra-GCC trade, consumer expenditure and two-digit production data are collected from National Accounts Statistics of respective countries.

Oman excepted, the data on real GDP and real non-oil GDP have been calculated on the basis of their respective price deflators. In the case of Oman, however, due to unavailability of consistent non-oil GDP deflator, CPI has been used to deflate the non-oil GDP data. The price inflation series are based on CPI in all cases. The data on exchange rates relate to the state's currency against a basket of three OECD currencies; namely the US Dollars, Japanese Yen, and Pound Sterling). The data on output, gross capital stock, labour input and real wages for the purpose of estimating production functions, and market inertia are based on the examination of four two-digit sectors - (1) Food, Drink and Tobacco, (2) Oil and oil related activities, (3) Chemicals, and (4) other manufacturing products - in all the six states. For the purpose of estimating the money function, banks base rates have been used as a measure of domestic interest rates; whilst the average OECD base rates have been taken as a measure of the foreign interest rates.

ENDNOTES

1. These include the following:
(a) Free trade areas in which the member nations remove all trade impediments among themselves but retain freedom regarding their policies via-a-vis rest of the world; (b) Customs union which are being very similar to free trade areas except that member nations must conduct and pursue common external commercial relations; (c) Common markets which are customs union that also allow for factor mobility across national frontiers; (d) Complete economic unions which are common markets that ask for complete unification of monetary and fiscal policies; (e) Complete political integration where the participants form literally one nation, with one parliament and one nation's government.

2. For example see Houthakker & Magee (1969), Mayes (1971), Verdoorn and Schwartz (1972) and Kreinin (1973).

3. For the detailed historical evolution of capital mobility, see Brenton et.al (1998).

4. The geometric illustration of such analyses are explored in Mikic (1998, pp 462-5).

5. The expected inflation rate was calculated by deducting the current inflation rates from the average long run inflation rate.

CHAPTER FOUR

TIME SERIES, ECONOMETRIC ESTIMATION AND EVALUATION OF FINDINGS

4.1 Introduction: Time Series Properties

Not until so long ago econometricians paid little attention to the specification of the dynamic structure of the time series. They had assumed that most time series economic data are non-stationary, that is they grow over time with non-constant variances, but have no effect on their empirical analyses. It was a great blow to traditional econometrics, when several time series based studies showed that statistics such as the t values, DW statistics, and measures of R-squared and F-statistics did not retain their conventional characteristics in the presence of non-stationary data. By definition, a series is referred to a stochastic process whose characteristics are expected to change over time. In other words, such time varying series exhibit non-constant variance.

Moreover, these time series studies proved that running regressions with such data could produce spurious results (i.e. results which erroneously indicate, through misleading values of such statistics, that a meaningful relationship among the regression variables exists).

One consequence of such discoveries is that it has now become a common practice to test for non-stationarity of economic time series data prior to any econometric estimation. Thus, stationarity is an important characteristic of the stochastic processes that we attempt to model. In the case of economic time series, as will be shown later on, first differencing would generate stationarity variables. However, as pointed out by Engle and Granger (1987), although first differencing may induce stationarity, first differenced regressions can also filter out long run information when the variables in levels are cointegrated. By definition, variables are said to be cointegrated if they exhibit long run relationship.

The process of arriving at stationarity is referred to as unit root test for non-stationary series. The unit root test proposed by Dickey-Fuller (1979) for stationarity postulates that most macro variables move over time with a

non-constant variance, making modelling a difficult task. Assume a variable X being modelled against time as:

$$X_t = a + b\,t + u_t \qquad (4.1)$$

where $u_t = \rho u_{t-1} + \varepsilon_t \qquad \varepsilon_t \sim NID(0, \sigma^2)$ (4.2)

Substituting (3.2) into (3.1) and re-arranging gives the reduced form expression:

$$X_t = \alpha + \beta\,t + \gamma\,X_{t-1} + \varepsilon_t \qquad (4.3)$$

In expression (4.3) if $\gamma=1$, then X is said to be stationary of order 1 [i.e. X $\sim$ I (1)] that is:

$$\Delta X_t = \varepsilon_t \qquad (4.4)$$

With ε_t being a white noise error term, ΔX will be a random walk variable with a finite variance. For any value of γ less than unity, X will be stationary; while any value of γ greater than unity will lead to an explosive variance of X.

The augmented Dickey-Fuller (ADF) test, on the other hand, tests the hypothesis that, in the general model,

$$\Delta X_t = \alpha + \beta\,t + \Sigma\gamma_i\,X_{t-i} + \varepsilon_t \qquad (4.5)$$

$\gamma_i = 1$ for every lag of X.

In short, in the DF test the first difference of a variable is regressed on its own lag level, in addition to a drift and a deterministic time trend, if required. In the ADF test lags on the dependent variable are included to ensure white noise errors. The test statistic in the DF and the ADF procedures is calculated in the same way as to a t-ratio. However, due to the presence of non-normality, the corresponding critical values are not exactly t-distributed, and hence have been calculated and offered in Fuller (1976).

The concept of cointegration follows from stationarity. Assume that there are two variables, X and Z, each being stationary of order 1. If there exists a linear combination so that

$$Z_t = a + b\,X_t + e_t \qquad e_t \sim \text{NID}\,(0, \sigma^2) \tag{4.6}$$

then X and Z are said to be cointegrated of order 1. In this case as developed by Engle and Granger (1987), a test for the presence of cointegration is performed by simply running an OLS regression of Z on X and subjecting the residual of equation (4.5) to a unit root test. In effect the cointegration test also involves a process of error correction.[1] In general, variable Z could be regressed on k variables, producing a vector of k coefficients, better known as vector cointegration. In the spirit of Granger causality, in this case the cointegrating equation may not be

unique; that is other variables could also be regressed on Z and produce cointegrating equations. Following Hall (1986) and McMillin (1991), the optimal cointegrating equation is the one which maximizes the adjusted R-squared. The variables in question are said to be cointegrated if these residuals prove to be stationary. The residuals can then be tested using the DF and ADF tests procedure.

However, if the findings suggest that there appear to be, generally, no such strong linear combinations amongst these variables, then one is led to adopt and apply the vector auto-regressive technique (VAR). This is because VAR is a system of simultaneous auto-regressive equations allowing for non-linear relationships amongst variables in a multi-variate setting. A general form of an augmented VAR may be given as follows:

$$Z_t = a_0 + a_1 t + \Sigma \Phi_i Z_{t-i} + \Psi X_t + u_t \qquad (4.7)$$

where Z is an (m x 1) vector of jointly determined dependent variables, and X is an (q x 1) vector of exogenous variables. Finally, the (m x 1) vector of disturbances, u, satisfies all the classical assumptions.

Although the VAR technique is a reduced from procedure, it has several advantages over competing methods. As has been noted by Raynold et al (1991), the VAR technique imposes no spurious *a priori* constraints or

assumptions on variables, and hence allows the data to determine the model. Moreover, as has been pointed out by Fischer (1981), Runkle (1987) and Haffer and Sheehan (1991), since few restrictions are imposed on the way in which the system variables interact, the VAR appears to be well-suited for examination of the channels through which a variable operates. Nevertheless, economists tend to consider VAR as a last resort for modelling purposes since its atheoretical property is less appealing.

Table 4.1 reports the results of unit root test based on one-period lag (all include time trend and the constant term) for all the variables for each and every GCC country. The values given in this table are equivalent of calculated student t test in level (L), first-differenced (Δ) and in second-differenced (Δ^2). If a variable is found to exhibit a calculated ADF value, say in level, larger than the critical value of Dickey-Fuller at the 5% significance, then the variable is said to be stationary at level; or to be integrated of order zero [I(0)]. As indicated by the test statistics for each variable, with the exception of money supply variable which exhibits I(2) in Kuwait, Qatar and Saudi Arabia, the null hypothesis of non-stationarity is consistently rejected at the 5% expressed in first differenced. This would mean that the money demand function - equation (2.10) in Chapter Two - may exhibit no cointegration, as its independent variable is of

different level of integration. Moreover, as is usually anticipated, the price inflation variable, Π, exhibits zero integration order.

Table 4.2 presents the results of the cointegartion test for equations (3.7) to (3.11) for all the GCC economies. The Johansen test of cointegration here attempts to compare the size of the estimated LR against its critical values (normally at the 5% and the 1%). Cointegrating hypothesis are rejected if the former estimates exceed their critical values. In the case of market inertia, consumption function and production function we have applied cointegration to four broad sectors of the GCC economies: Food, Beverages & Tobacco; Oil and related activities; Chemicals; and manufactured goods. A careful examination of Table 4.2 based on the LR tests suggest, with the exception of money demand equation for Qatar and Saudi Arabia, all other regression results are indicative of cointegration amongst relevant variables in the given equations, at various degrees.[2] As Table 4.2 suggests, cointegration results are indicative of the existence of two cointegrating equations amongst most models in different GCC countries. This finding seems to match, by and large, with most studies conducted in this area of research for the GCC economies. This would mean that the use of VAR technique is not to be required here.

4.2 Econometric Estimation: Procedures and Findings

Having studied and examined the properties of our data, in this section we attempt to estimate our econometric models - given as equations (3.7) to (3.11) in Chapter Three - in conjunction with stationarity results and the cointegration residuals. As we can recall, with the exception of a few variables, most variables should be expressed in first differenced form at this stage of estimation. In addition, in each equation there will appear a respective residual variable derived from the cointegrating equations. Following Darrat (1984) and Al-Mutawa & Darrat (1995), in the case of money demand equation for Saudi Arabia and Qatar where no cointegration was found, we propose to include a one-period lagged dependent variable to improve the precision of the estimators.

As has been discussed elsewhere, our econometric estimation procedure here is based on two major tasks. First, we wish to estimate the equations over the entire sample period. Second, we wish to test whether there has been any significant structural changes since the introduction of GCC in 1981. Given our limited size of observations, any test for structural change should be made with the use of appropriate dummy variables.[3] If the estimated coefficient of the dummy variable, in any given model, proves to be positive and statistically significant, we can then argue that

the effect of the formation of GCC has improved conditions. We now proceed with the estimation procedures and the evaluation of the findings based on the order presented in Chapter Three.

4.2.1 Estimated Market Inertia Equation

The aim here is to estimate *mic* as a measure of market inertia for the four sectors of the GCC states. The estimated equation (3.7) in conjunction with the error correction yielded meaningful and significant estimated coefficients for all the sectors of the GCC economies. On the basis of the estimated parameters a_3 and a_4, the estimated *mic* for the four sectors are presented in Table 4.3. As the results suggest, Food & Beverages sector appears to exhibit the lowest degree of market inertia in all the GCC countries compared with the other three sectors. As explained in Chapter Three on the issue of subsidies, it must be borne in mind that a large number of staple food are being heavily subsidised in most GCC countries. These distortions in prices may disturb the proper working of such markets, and hence the estimated low level of *mic* should be interpreted with caution. On the other hand, Oil and manufactured sectors give the highest estimates of *mic*. On the whole, UAE, Kuwait and Bahrain offer the lowest average estimates of *mic*, but not significantly different from the overall GCC average of 68%. The *mic* estimates though indicate some degrees of inertia in representative sectors of the GCC, they

are significantly lower than those observed in the European Union and in most other OECD countries.[4]

4.2.2 Estimated Consumption Functions

In estimating the consumption function our aim is to find the size of MPC in the GCC countries and the contribution made to MPC as a result of the formation of GCC in 1981. In so doing, we need to introduce a dummy variable, taking zero values for the years 1970 to 1981 and unit values for 1982 to 1998. There are three ways of incorporating a dummy variable into a model: (a) through intercept term, (b) through the slope parameter and (c) through both intercept and slope.[5] Since we are interested in the estimate of mpc, we attempt to include the dummy using method (b). The consumption function given as equation (3.8) can now be rewritten as:

$$\Delta\log(C_t) = \beta_0 + \beta_1 \Delta\log(Yd_t) + \beta_2 \Delta\log(R_t) + \beta_3 \Pi_t$$

$$\beta_4 D_t * \Delta\log(Yd_t) + \beta_5 RES_{t-1} + \varepsilon_t \qquad (4.8)$$

Where D represents the GCC dummy and RES is the residual vector derived from the error correction mechanism through applying cointegration. As explained in Chapter Two, Yd, R and Π are the real disposable income, market rate of interest and the price inflation, respectively. The βs are the parameters to be estimated. The estimated value of β_1 gives the size of mpc for the overall period (in isolation with the GCC formation) and β_4 represents the size of the additional

contribution to mpc through GCC formation. If β_4 is found to be positive and significantly different from zero, then we can say that the GCC formation has improved the size of mpc by as much as β_4. For the estimation purpose, all the variables – Π, RESID and D excepted – are expressed in differenced form.

Table 4.4 presents the estimated consumption function – given as equation (4.8) – for the two classes of durables and non-durables in the six GCC states.[6] The estimated values of mpc, parameter β_1, varies between 0.412 and 0.661 and are statistically significant in all the six states. With the exception of the Saudi Arabia, the estimated values of β_4 indicate positive and statistically significant contribution to the consumption pattern in the GCC. Those significant values of β_4 vary from as little as 0.207 in Qatar to as large as 0.421 in the UAE.[7] On the whole the estimated parameters of Π and R do comply with theoretical framework and are generally significant in most cases.[8] The estimated parameter β_5 indicates that in almost all cases the inclusion of the error correction residuals is fully justified. The overall goodness of fit of our estimated consumption functions is shown by the estimated R^2 adjusted. Considering that our consumption functions being in differenced form, one should argue that the estimated R^2 adjusted estimates are indicative of reasonably good fit.

4.2.3 Estimated Production Functions

As discussed earlier in Chapter Three, the reason for estimating production functions here is primarily based on examining whether the formation of GCC has brought about any improvement in productivity in different sectors of these economies. Based on equation (3.9), our labour productivity model for the estimation purposes may be shown as follows:

$$\Delta\log(Q_t) = \alpha_0 + \alpha_1 \Delta\log(W_t) + \alpha_2 \Delta\log(K_t/L_t) + \alpha_3 D_t$$
$$\alpha_4 RES_{t-1} + \varepsilon_t \qquad (4.9)$$

Here Q, W and K/L represent the average labour productivity, the real wage and the ratio of capital to labour, respectively.[9] D is the dummy variable and RES is the estimated residuals derived from the cointegration procedure. Since the variables are expressed in logarithmic form, the αs here represent the elasticity parameters relating the right-hand side variables to labour productivity. It can be argued that $\alpha 1+\alpha 2$ represents the scale parameter giving the total contributions made by real wage and capital-labour substitution towards labour productivity; whereas $\alpha 3$ gives the additional contribution made to productivity through the GCC formation alone. Finally, ε is a white noise error term.

The estimated equation (4.9) for four sectors of the six countries are offered in Table 4.5. A general examination of these findings suggests that the estimated R^2-adjusted values are indicative of reasonably good fit of the estimated equations; and that most parameters are statistically significant. As expected, the estimated findings suggest that in the Oil and the Chemicals sectors the estimated parameter of K/L ratio represent higher magnitudes compared to those of other sectors of the GCC economies. In countries such as Bahrain, Qatar and Saudi Arabia, manufacturing sectors (sectors one and four) exhibit significant but less than unity scale parameters, whereas increasing returns to scale is observed in all sectors of the other economies. Of greater importance to us here is the examination of the estimated coefficient of the dummy variable. It can be generally noted that the estimated dummy coefficient indicates to the fact that the Oil and Chemicals sectors exhibit very small, and in most cases, insignificant values of α_3, indicating that the GCC formation has hardly changed the productivity of these sectors. On the other hand, Oman excepted, the estimated coefficient of the dummy variable proves to be relatively high and significant in the other two sectors of the GCC economies. Food, Drink and Tobacco sector of the UAE and Bahrain appear to have received much greater contributions to

their productivity from the GCC formation than other sectors of these economies.

In short, as Table 4.5 suggests, the contributions made to labour productivity through GCC formation appears to have benefited the manufacturing sectors of these economies much greater than their Oil and Chemicals sectors. Moreover, these findings also show that on the whole Bahrain, Kuwait and the UAE appear to have benefited more productivity gains through GCC formation than others have. Finally, the estimated long-run elasticity of substitution (ES) for the GCC sectors suggest generally that oil and chemical sectors tend to have enjoyed greater factor elasticity than other sectors. This estimate varies in magnitude from as little as 0.345 in manufacturing sector in Qatar to as large as 2.092 in Saudi Arabia's chemicals.

4.2.4 Estimated Money Demand Model

The reason behind estimating money demand model, as explained earlier, is two folds. First, to determine which factors have given rise to demand for money in the GCC economies over the entire period; and second, to investigate whether the demand for money has changed significantly since the formation of the GCC in 1981. Based on the model of money demand

– expression (3.10) in Chapter Three – our specific money demand model may be given as:

$$\Delta\log(MS_t) = \gamma_0 + \gamma_1 \Delta\log(X_t) + \gamma_2 \Pi_t + \gamma_3 \Delta\log(Rd_t) + \gamma_4 \Delta\log(Rf_t) + \gamma_5 \Delta\log(E_t) + \gamma_6 D_t + \gamma_7 RES_{t-1} + \varepsilon_t \qquad (4.10)$$

Where RES and D are the cointegrating residuals, and the GCC dummy variable, respectively. Variables, X, P, Rd, Rf and E are the non-oil real GDP, expected inflation rate, domestic interest rate (market rate of interest adopted here), foreign interest rates, and the exchange rates, respectively. The γs are the structural parameters of the money demand model to be estimated; and ε is the usual white noise error. The other variables are the same as explained in Chapter Three. It should be noted that apart from the inflation variable, Π, the other variables are in log-differenced form.

The estimated results, given in Table 4.6, generally comply with the theory and offer reasonable fit based on R^2-adjusted for all the six countries. First of all, with the exception of Saudi Arabia and Qatar which have exhibited no cointegration, it should be noted that the contribution of the error correction residuals, RES, appears to be significant in all other cases. Secondly, Kuwait excepted, in the other five countries the estimated coefficient of output – income elasticity of money demand – turned out to be positive and significant, varying between 18% and 46%. Thirdly, with

the exception of Kuwait, inflation elasticity, γ_2, proves to be negative and significant. Money demand in the UAE appears to be more sensitive to inflation than in the other GCC countries. Fourthly, the estimated findings for the coefficients of both domestic and foreign interest rates, γ_4 and γ_5 respectively, give unclear picture. Whilst only Kuwait demonstrates meaningful and significant estimates for γ_4 and γ_5, the rest show less sensitivity to these domestic and foreign interest rates. Nevertheless, apart from Qatar, the other five countries give negative –though relatively small in magnitude- and significant estimates for the exchange rates variable.

Finally, the estimated coefficient of the dummy variable, γ_6, shows that whilst the formation of GCC has made small and insignificant contributions in both Saudi Arabian and Kuwaiti money markets, it has substantially enhanced the money demand in the remaining four countries, on average, by as much as 25%.

4.2.5 Estimated Import Function

To demonstrate whether the formation of GCC has improved trade amongst members, we attempt to estimate an intra-GCC imports function over the entire period and allow for a dummy variable to take account of

the post GCC period. Based on equation (3.11), our intra-GCC aggregate imports function may be presented as:

$$\Delta\log(M_t) = \delta_0 + \delta_1 \log(RP_t) + \delta_2 \Delta\log(E_t) + \delta_3 \Delta\log(Y_t) + \delta_4 D_t + \delta_5 RES_{t-1} + \varepsilon_t \quad (4.11)$$

where M is the real value of total imports of one member from the rest of the GCC. RP is the relative prices representing the ratio of a member's consumer price index to the average GCC's consumer price index.[10] The parameters δs represent the elasticities relating factors to imports. The rest of the variables are the same as defined in Chapter Two. The white noise error term is represented by εt.

The estimated imports function for each member of GCC is shown in Table 4.7. As the table indicates, the estimated relative price elasticity of imports is unexpectedly large and significantly different from zero in all the countries, indicating that despite the existence of CU in GCC, there still remains price differentials which form as a significant determinant of trade amongst the GCC members. As explained earlier, since we are examining the overall aggregate imports, theoretically, one expects to see relative prices (here being the ratio of domestic price inflation to the average GCC price inflation) to become less significant as CU progresses towards removing all obstacles on trade amongst its members. However,

the evidence here suggests that the GCC has failed to reduce cost/price differentials amongst its members and hence such relative prices still remain significantly different from unity.

On the other hand, the estimated coefficient of the exchange rates in four out of six countries is shown to be small and insignificant. This is due to the fact that the GCC's long run exchange rates have remained rather stable against a basket of OECD currencies. The estimated income elasticity of imports, δ_3, gives a clear indication of the importance and significance of income in determination of intra-GCC trade. As the estimated values of the coefficient of the dummy variable suggest, in only four countries have intra-trade improved rather significantly (on average around 0.4) since the formation of GCC. On the whole, as estimated intra-imports functions show, there appears to be rather limited evidence in support of trade improvement amongst the GCC members since formation of their CU. It should be noted that our imports models estimated here are based on total imports of on state from the others, and hence is subject to aggregation problem. Unfortunately due to lack of reliable data, we could not estimate our import functions for different types of products/services.

4.3 Summary and Conclusions

This chapter has dealt with econometric estimation of the models explained in Chapter Three. To improve the degree of precision of our estimated results, we considered examining the time series properties of our variables using the hybrid unit root test for stationarity.

Following from stationarity, it was argued that stationary variables of similar order may reveal long run equilibrium within a given econometric model. To that end, this chapter conducted tests for cointegration in all our models. The general finding was that in almost all cases there appeared to exist at least one cointegrating equation explaining long run relationship amongst variables within a given model. As the final estimation procedure, we included in our econometric models – given in Chapter Three – the cointegrating residuals to improve the degree of goodness of fit of our models. In general, most of our models exhibited both functional stability and meaningful statistical significance.

The findings based on consumption behaviour are indicative of rather significant contributions to mpc through GCC formation. The estimated coefficient of the GCC dummy variables show that, on average, mpc has

been boosted by around 25% since the formation of GCC in 1981, giving an annual growth rate of nearly 1.5%.

In so far as labour productivity is concerned, the estimated production functions suggest rather limited productivity gain being achieved through the CU formation. Productivity gains through capital-labour substitution proved to be more pronounced in oil and chemical sectors than other sectors of most GCC states. That finding was further supported by the estimates of factor elasticity.

The estimated money demand model has indicated that generally the GCC states' money markets are less prone to interest rates and rather more sensitive to their domestic inflation rates. Moreover, the estimated coefficient of the dummy variable suggests that there is rather limited contributions made to money markets in the GCC through the CU formation.

Finally, in examining the scale of trade creation through GCC formation we have estimated intra-GCC imports models for all the six states. Once again, the estimated results show that there has been a rather limited and less significant contributions made to intra-GCC trade through the CU

formation. In short, the size of trade creation is expected to have been rather small since the formation of GCC in 1981.

Endnotes

1. Engle and Granger (1987) demonstrate that a system of cointegrated variables can be represented by a dynamic error-correction model, where residuals (lagged one period) is added to the model containing stationary variables. The coefficient of this error-correction reflects the process by which the dependent variable adjusts in the short run to its long run position.

2. We repeated the cointegration test based on a less powerful method suggested by Engle-Yoo, which exhibited rather unclear and inconclusive results in almost all cases.

3. The dummy variables are constructed so that they will take zero values for the period prior to 1981, and unit values for the post 1981 period.

4. For a thorough examination of the methodological background and the findings based on European economies' sectoral inertia see Bijongek et al (1994).

5. An estimation based on method (a) led to an insignificant shift coefficient.

6. Data for non-durables have been residually estimated by the author. There are no reliable data published on non-durables in the GCC countries.

7. On the basis of simple multiplier, the inclusion of the GCC dummy, D, is seen to improve the multiplier by as little as 35% in the case of Qatar, and as much as 250% for the case of UAE.

8. A test based on Kalmon Filter methodology was conducted to test whether β_1 is sensitive to movements in inflation and interest rates. The results were indicative of no significant relationship between these indicators.

9. This function yields an elasticity of substitution (ES) which is non-linear in K/L ratio. For detailed derivation and uses of ES, see Taghavi (1983).

10. Theoretically it can be argued here that as Customs Union moves towards removing cost differentials amongst member states, then the relative price ratio is expected to approach unity. This means that relative prices will then become less significant.

Table 4.1: Unit-Root Tests: Based on ADF Test
GCC 1970-98

Bahrain

	L	Δ	Δ^2
Y	-3.542	-4.091*	-4.998**
P	-1.453	-3.812*	-5.012**
MS	-2.158	-3.802*	-4.689*
M	-1.245	-3.802*	-3.992*
X	-2.234	-3.993*	-4.356*
C	-2.098	-3.891*	-4.213*
R	-2.001	-3.871*	-4.021*
E	-1.788	-3.878*	-4.481*
Π	-3.768*	-6.321**	-7.982**

Kuwait

	L	Δ	Δ^2
Y	-3.341	-4.001*	-4.810**
P	-2.513	-3.992*	-4.912**
MS	-2.112	-2.909	-3.992*
M	-2.041	-3.992*	-4.291*
X	-2.131	-3.891*	-4.656**
C	-2.191	-3.993*	-4.233*
R	-2.303	-3.878*	-4.221**
E	-2.127	-3.901*	-4.321**
Π	-3.888*	-5.214**	-7.222**

Oman

	L	Δ	Δ^2
Y	-3.354	-4.201*	-4.810**
P	-2.413	-3.892*	-4.516*
MS	-2.111	-3.867*	-4.221*
M	-2.246	-3.973*	-4.391*
X	-2.333	-3.993*	-4.856**
C	-2.295	-4.003*	-4.733*
R	-2.205	-3.978*	-4.521*
E	-1.881	-3.803*	-4.562*
Π	-4.128*	-6.124**	-7.999**

Table 4.1 continued

Qatar

	L	Δ	Δ^2
Y	-2.345	-3.991*	-4.825**
P	-1.153	-3.992*	-6.112**
MS	-1.891	-3.782*	-4.982**
M	-2.247	-3.982*	-4.395*
X	-2.232	-3.998*	-4.357*
C	-2.334	-3.873*	-5.033**
R	-2.273	-3.918*	-5.323**
E	-1.998	-3.972*	-5.001**
Π	-4.887**	-6.244**	-8.202**

Saudi Arabia

	L	Δ	Δ^2
Y	-3.345	-4.051*	-4.810**
P	-1.211	-4.452*	-5.912**
MS	-2.112	-2.827	-3.981*
M	-2.241	-3.987*	-4.237*
X	-2.771	-3.961*	-4.613*
C	-2.295	-3.997*	-4.504*
R	-2.213	-3.970*	-4.345*
E	-1.919	-2.851	-3.879**
Π	-3.956*	-5.414**	-6.927**

United Arab Emirates

	L	Δ	Δ^2
Y	-3.331	-4.111*	-5.120**
P	-2.661	-3.997*	-4.915**
MS	-1.897	-3.977*	-4.619**
M	-2.991	-4.012*	-5.546**
X	-2.167	-3.902*	-4.116*
C	-2.201	-3.994*	-4.698*
R	-2.038	-3.866*	-4.422*
E	-2.211	-3.777*	-4.656*
Π	-4.789**	-7.145**	-8.002**

** 1% critical value ⇒ -4.535

* 5% critica value ⇒ -3.674

Table 4.2: Johansen Cointegration Test: GCC 1970-98

1. BAHRAIN

Eigenvalue	*Likelihood Ratio*	*5% Critical Value*	*1% Critical Value*	*Hypothetical number of C.Es*

Market Inertia Equation

Sector One

0.4456	35.12	29.68	35.65	none **
0.4654	16.15	15.41	20.04	at most 1*
0.2021	3.34	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Sector Two

0.5561	30.12	29.68	35.65	none **
0.3654	15.54	15.41	20.04	at most 1*
0.1102	2.87	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Sector Three

0.4591	16.30	15.41	20.04	none *
0.0987	1.89	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equation at 5%.

Sector Four

0.7517	57.01	47.21	54.46	none **
0.5112	32.21	29.68	35.65	at most 1 *
0.2877	18.98	15.41	20.04	at most 2 *
0.0776	3.04	3.76	6.65	at most 3

LR tests indicate 3 cointegrating equations at 1%.

Consumption Equation

Durables

0.5317	69.01	47.21	54.46	none **
0.5209	41.14	29.68	35.65	at most 1 **
0.3877	20.81	15.41	20.04	at most 2 **
0.1187	3.35	3.76	6.65	at most 3

LR tests indicate 3 cointegrating equations at 5%.

Non-Durables

0.3212	16.09	15.41	20.04	none *
0.1043	2.98	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equations at 5%.

Table 4.2 continued

Production Equation

Sector One

0.5788	37.12	29.68	35.65	none **
0.3867	20.81	15.41	20.04	at most 1 **
0.1087	3.35	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Sector Two

0.5561	30.12	29.68	35.65	none *
0.2654	18.15	15.41	20.04	at most 1*
0.0231	2.12	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Sector Three

0.3961	15.80	15.41	20.04	none *
0.1245	3.04	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equation at 1%.

Sector Four

0.6317	22.01	15.41	20.04	none **
0.3112	3.21	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equation at 1%.

Money Equation

0.4324	57.44	47.21	54.46	none **
0.3372	42.22	29.68	35.65	at most 1 **
0.2109	19.99	15.41	20.04	at most 2 *
0.0587	3.12	3.76	6.65	at most 3

LR tests indicate 3 cointegrating equations at 5%.

Imports Equation

0.5532	47.76	29.68	35.65	none **
0.3057	18.86	15.41	20.04	at most 1 *
0.0987	2.98	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Table 4.2 continued

2. KUWAIT

Eigenvalue	*Likelihood Ratio*	*5% Critical Value*	*1% Critical Value*	*Hypothetical number of C.Es*
Market Inertia Equation				
	Sector One			
0.4654	26.15	15.41	20.04	none **
0.2021	3.34	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 5%.			
	Sector Two			
0.5161	30.14	29.68	35.65	none **
0.3654	16.42	15.41	20.04	at most 1*
0.1032	2.87	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 5%.			
	Sector Three			
0.4393	16.50	15.41	20.04	none *
0.0897	1.99	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 5%.			
	Sector Four			
0.7517	57.01	47.21	54.46	none **
0.5112	32.21	29.68	35.65	at most 1 *
0.2877	18.98	15.41	20.04	at most 2 *
0.0776	3.04	3.76	6.65	at most 3
	LR tests indicate 3 cointegrating equations at 1%.			
Consumption Equation				
	Durables			
0.6107	47.42	29.68	35.65	none **
0.3077	18.19	15.41	20.04	at most 1 *
0.1187	2.54	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 5%.			
	Non-Durables			
0.3452	16.09	15.41	20.04	none *
0.1004	2.84	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equations at 5%.			
Production Equation				
	Sector One			
0.5788	37.12	29.68	35.65	none **
0.3867	21.12	15.41	20.04	at most 1 **
0.1087	3.15	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 5%.			

Table 4.2 continued

Sector Two

0.5160	32.25	29.68	35.65	none *
0.2654	16.52	15.41	20.04	at most 1*
0.0231	2.09	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Sector Three

0.3961	15.80	15.41	20.04	none *
0.1245	3.04	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equation at 1%.

Sector Four

0.6317	22.01	15.41	20.04	none **
0.3112	3.21	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equation at 1%.

Money Equation

0.5376	47.22	29.68	35.65	at most 1 **
0.2109	19.99	15.41	20.04	at most 2 *
0.0587	3.12	3.76	6.65	at most 3

LR tests indicate 3 cointegrating equations at 5%.

Imports Equation

0.5734	47.99	29.68	35.65	none **
0.3057	17.62	15.41	20.04	at most 1 *
0.0987	1.85	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Table 4.2 continued

3. OMAN

Eigenvalue	*Likelihood Ratio*	*5% Critical Value*	*1% Critical Value*	*Hypothetical number of C.Es*
Market Inertia Equation				
	Sector One			
0.4584	23.53	15.41	20.04	none **
0.1018	3.04	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 5%.			
	Sector Two			
0.5187	31.49	29.68	35.65	none *
0.3393	16.12	15.41	20.04	at most 1*
0.1103	2.98	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 5%.			
	Sector Three			
0.4296	16.33	15.41	20.04	none *
0.0897	2.09	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 5%.			
	Sector Four			
0.7416	56.17	47.21	54.46	none **
0.5029	31.27	29.68	35.65	at most 1 *
0.2767	17.83	15.41	20.04	at most 2 *
0.0676	2.94	3.76	6.65	at most 3
	LR tests indicate 3 cointegrating equations at 5%.			
Consumption Equation				
	Durables			
0.6077	17.93	15.41	20.04	none *
0.1377	2.79	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 5%.			
	Non-Durables			
0.4426	16.39	15.41	20.04	none *
0.1107	3.14	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 5%.			
Production Equation				
	Sector One			
0.6871	19.23	15.41	20.04	none **
0.1072	3.15	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 5%.			

Table 4.2 continued

Sector Two

0.6159	19.23	15.41	20.04	none *
0.0412	2.39	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equation at 5%.

Sector Three

0.5651	17.06	15.41	20.04	none *
0.1149	3.45	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equation at 1%.

Sector Four

0.6472	28.16	15.41	20.04	none **
0.2123	3.61	3.76	6.65	at most 1

LR tests indicate 1 cointegrating equation at 1%.

Money Equation

0.6360	48.22	29.68	35.65	none **
0.2306	18.90	15.41	20.04	at most 1 *
0.0873	3.26	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Imports Equation

0.5847	46.92	29.68	35.65	none **
0.3110	17.29	15.41	20.04	at most 1 *
0.0897	2.05	3.76	6.65	at most 2

LR tests indicate 2 cointegrating equations at 5%.

Table 4.2 continued

4. QATAR

Eigenvalue	*Likelihood Ratio*	*5% Critical Value*	*1% Critical Value*	*Hypothetical number of C.Es*
Market Inertia Equation				
Sector One				
0.4594	28.15	15.41	20.04	none **
0.2201	3.53	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 5%.				
Sector Two				
0.5569	36.14	29.68	35.65	none **
0.3594	17.21	15.41	20.04	at most 1*
0.1238	2.99	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				
Sector Three				
0.5330	17.09	15.41	20.04	none *
0.0797	2.08	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 5%.				
Sector Four				
0.7517	57.01	47.21	54.46	none **
0.5112	32.21	29.68	35.65	at most 1 *
0.2877	18.98	15.41	20.04	at most 2 *
0.0776	3.04	3.76	6.65	at most 3
LR tests indicate 3 cointegrating equations at 1%.				
Consumption Equation				
Durables				
0.6371	49.21	29.68	35.65	none **
0.3026	19.91	15.41	20.04	at most 1 *
0.1073	2.94	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				
Non-Durables				
0.4450	18.01	15.41	20.04	none *
0.0949	2.94	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equations at 5%.				
Production Equation				
Sector One				
0.5888	36.25	29.68	35.65	none **
0.3697	22.02	15.41	20.04	at most 1 **
0.1087	3.45	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				

Table 4.2 continued

Sector Two				
0.5967	33.52	29.68	35.65	none *
0.2594	16.22	15.41	20.04	at most 1*
0.0338	2.78	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				
Sector Three				
0.5916	15.90	15.41	20.04	none *
0.1146	3.48	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 1%.				
Sector Four				
0.6317	22.01	15.41	20.04	none **
0.3112	3.21	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 1%.				
Money Equation				
0.3200	11.92	15.41	20.04	none
0.0577	1.49	3.76	6.65	at most 1
LR tests indicate no cointegrating equations at 5%.				
Imports Equation				
0.7070	19.29	15.41	20.04	none *
0.0987	2.85	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 5%.				

Table 4.2 continued

5. SAUDI ARABIA

Eigenvalue	*Likelihood Ratio*	*5% Critical Value*	*1% Critical Value*	*Hypothetical number of C.Es*
Market Inertia Equation				
Sector One				
0.3549	14.15	15.41	20.04	none
0.1919	3.39	3.76	6.65	at most 1
LR tests indicate no cointegrating equation at 5%.				
Sector Two				
0.5621	32.14	29.68	35.65	none *
0.3549	16.27	15.41	20.04	at most 1*
0.1032	2.99	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				
Sector Three				
0.5339	16.90	15.41	20.04	none *
0.0897	2.07	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 5%.				
Sector Four				
0.7129	38.21	29.68	35.65	none **
0.2478	16.08	15.41	20.04	at most 1 *
0.0776	2.48	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 1%.				
Consumption Equation				
Durables				
0.7079	47.28	29.68	35.65	none **
0.3076	16.95	15.41	20.04	at most 1 *
0.1176	2.74	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				
Non-Durables				
0.5412	16.99	15.41	20.04	none *
0.1109	2.97	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equations at 5%.				
Production Equation				
Sector One				
0.5818	37.29	29.68	35.65	none **
0.3679	20.28	15.41	20.04	at most 1 **
0.1007	3.25	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				

Table 4.2 continued

	Sector Two			
0.5620	33.52	29.68	35.65	none *
0.2054	15.52	15.41	20.04	at most 1*
0.0351	2.19	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 5%.			
	Sector Three			
0.5532	33.33	29.68	35.65	none *
0.2912	15.70	15.41	20.04	at most 1 *
0.1146	3.14	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 1%.			
	Sector Four			
0.6717	22.17	15.41	20.04	none **
0.2118	2.91	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 1%.			
Money Equation				
0.4706	14.02	15.41	20.04	none
0.0109	2.13	3.76	6.65	at most 1
	LR tests indicate no cointegrating equations at 5%.			
Imports Equation				
0.5704	47.91	29.68	35.65	none **
0.3072	17.02	15.41	20.04	at most 1 *
0.0987	1.85	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 5%.			

Table 4.2 continued

6. UAE

Eigenvalue	*Likelihood Ratio*	*5% Critical Value*	*1% Critical Value*	*Hypothetical number of C.Es*
Market Inertia Equation				
Sector One				
0.6054	28.25	15.41	20.04	none **
0.2013	3.40	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 5%.				
Sector Two				
0.6054	18.42	15.41	20.04	none *
0.1135	2.37	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 5%.				
Sector Three				
0.4333	17.09	15.41	20.04	none *
0.0917	2.09	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equation at 5%.				
Sector Four				
0.7710	56.01	47.21	54.46	none **
0.5010	30.19	29.68	35.65	at most 1 *
0.2807	17.80	15.41	20.04	at most 2 *
0.0878	3.14	3.76	6.65	at most 3
LR tests indicate 3 cointegrating equations at 1%.				
Consumption Equation				
Durables				
0.6107	47.42	29.68	35.65	none **
0.3077	18.19	15.41	20.04	at most 1 *
0.1187	2.54	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				
Non-Durables				
0.4859	19.99	15.41	20.04	none *
0.1107	2.94	3.76	6.65	at most 1
LR tests indicate 1 cointegrating equations at 5%.				
Production Equation				
Sector One				
0.5780	37.12	29.68	35.65	none **
0.3697	21.12	15.41	20.04	at most 1 **
0.1079	3.15	3.76	6.65	at most 2
LR tests indicate 2 cointegrating equations at 5%.				

Table 4.2 continued

	Sector Two			
0.6109	38.25	29.68	35.65	none **
0.2654	16.52	15.41	20.04	at most 1*
0.0231	2.09	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 5%.			
	Sector Three			
0.4969	16.88	15.41	20.04	none *
0.1305	3.44	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 1%.			
	Sector Four			
0.6407	23.51	15.41	20.04	none **
0.2912	3.31	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equation at 1%.			
Money Equation				
0.5191	18.91	15.41	20.04	none *
0.0487	2.92	3.76	6.65	at most 1
	LR tests indicate 1 cointegrating equations at 5%.			
Imports Equation				
0.7034	52.87	29.68	35.65	none **
0.2597	16.62	15.41	20.04	at most 1 *
0.0897	1.98	3.76	6.65	at most 2
	LR tests indicate 2 cointegrating equations at 5%.			

* statistically significant at the 5% level
** statistically significant at the 1% level

Table 4.3: Estimates of Market Inertia Criteria (*mic*)
Four sectors: GCC 1970-98

Sector	Bahrain	Kuwait	Qatar	Oman	S Arabia	UAE	GCC
Food, Beverages & Tobacco	48.3	50.1	53.8	54.1	49.7	48.8	**50.8**
Oil & related materials	77.2	78.1	80.8	87.2	89.4	86.5	**83.2**
Chemicals	68.4	63.2	68.2	70.3	66.6	58.1	**65.8**
Manufactured goods*	70.2	72.3	77.2	80.3	67.9	69.9	**72.9**
Average	**66.0**	**65.9**	**69.8**	**72.9**	**68.4**	**65.8**	**61.8**

* Other manufactured goods not given in other three categories.

Table 4.4: Estimated Consumption Functions: GCC 1970-98

Parameters	β_0	β_1	β_2	β_3	β_4	β_5	R^2-*adj*
Bahrain:							
Durables	650.3*	0.453*	-0.234*	0.043	0.321*	-0.123*	0.542
	(12.32)	(.143)	(.013)	(.141)	(.098)	(.011)	
Non-Durables	432.1*	0.513*	-0.011	-0.234*	0.145	-0.210*	0.488
	(21.1)	(.174)	(.125)	(.021)	(.091)	(.087)	
Kuwait:							
Durables	870.1*	0.602*	-1.031*	-0.987*	0.211*	0.872*	0.632
	(90.2)	(.213)	(.234)	(.314)	(.052)	(.244)	
Non-Durables	910.2*	0.509*	-0.876	-0.879*	0.302*	0.435*	0.612
	(98.2)	(.211)	(.563)	(.312)	(.022)	(.121)	
Oman:							
Durables	197.3*	0.412*	-0.124	-0.665*	0.321*	-0.321	0.553
	(34.2)	(.122)	(.101)	(.143)	(.108)	(.198)	
Non-Durables	211.1*	0.501*	-0.098	0.133	0.222*	-0.422*	0.578
	(41.1)	(.101)	(.108)	(.107)	(.088)	(.116)	
Qatar :							
Durables	80.2*	0.456*	0.023	0.054	0.108	0.332*	0.444
	(13.32)	(.113)	(.044)	(.074)	(.099)	(.112)	
Non-Durables	77.7*	0.433*	0.044	0.077	0.207*	0.345*	0.462
	(19.9)	(.128)	(.041)	(.054)	(.082)	(.102)	
Saudi Arabia:							
Durables	880.1*	0.568*	-0.662*	0.066	0.101	-0.521*	0.678
	(55.3)	(.219)	(.211)	(.078)	(.098)	(.231)	
Non-Durables	899.2*	0.664*	-0.132	-0.786*	0.121	-0.423*	0.653
	(62.2)	(.216)	(.112)	(.219)	(.099)	(.119)	
UAE:							
Durables	677.4*	0.512*	-0.421*	0.221	0.401*	0.308*	0.712
	(33.3)	(.192)	(.088)	(.176)	(.134)	(.161)	
Non-Durables	890.1*	0.571*	-0.134	-0.443*	0.308*	0.221	0.688
	(55.5)	(.209)	(.116)	(.208)	(.127)	(.197)	

* Statistically significant at the 5% level .

Table 4.5: Estimated Production Functions: GCC 1970-98

Parameters	α_0	α_1	α_2	α_3	α_4	*ES*	R^2-*adj*
Bahrain:							
Sector One	0.632	0.245*	0.167*	0.455*	0.442*	1.012	0.784
	(.512)	(.045)	(.014)	(.211)	(.200)		
Sector Two	0.447	0.814*	0.547*	0.103	-0.602*	1.782	0.659
	(.285)	(.203)	(.136)	(.124)	(.165)		
Sector Three	0.842*	0.651*	0.774*	0.156	0.512*	1.912	0.599
	(.335)	(.213)	(.211)	(.091)	(.201)		
Sector Four	0.498*	0.385*	0.287*	0.287*	0.379*	0.765	0.658
	(.181)	(.126)	(.086)	(.115)	(.142)		
Kuwait:							
Sector One	0.472	0.445*	0.710*	0.515*	-0.343*	0.891	0.684
	(.321)	(.151)	(.304)	(.222)	(.108)		
Sector Two	0.871*	0.644*	0.507*	0.013	-0.507*	1.023	0.759
	(.358)	(.301)	(.161)	(.141)	(.225)		
Sector Three	1.422*	0.755*	0.684*	0.161	0.321*	1.334	0.609
	(.425)	(.235)	(.233)	(.115)	(.108)		
Sector Four	0.584*	0.558*	0.579*	0.187	-0.479*	1.002	0.587
	(.218)	(.164)	(.166)	(.151)	(.048)		
Oman:							
Sector One	0.712*	0.545*	0.513*	0.115	-0.143	0.776	0.587
	(.312)	(.252)	(.204)	(.122)	(.118)		
Sector Two	1.781*	0.543*	0.708*	0.123	-0.407*	1.221	0.719
	(.458)	(.201)	(.313)	(.113)	(.125)		
Sector Three	0.444	0.525*	0.384	0.063	0.315*	1.766	0.622
	(.225)	(.135)	(.231)	(.105)	(.118)		
Sector Four	0.854*	0.552*	0.279	0.189	-0.379	0.665	0.576
	(.317)	(.204)	(.168)	(.141)	(.248)		

Table 4.5 continued

Qatar:								
	Sector One	0.823 (.412)	0.353* (.055)	0.267* (.094)	0.515* (.213)	0.142 (.114)	0.704	0.584
	Sector Two	0.873* (.405)	0.642* (.232)	0.457* (.162)	-0.306* (.122)	-0.421* (.159)	1.092	0.599
	Sector Three	0.943* (.325)	0.715* (.246)	0.742* (.313)	0.256* (.091)	0.522* (.201)	1.066	0.691
	Sector Four	0.918* (.382)	0.585* (.216)	0.477* (.096)	0.272* (.112)	0.294* (.092)	0.345	0.628
Saudi Arabia:								
	Sector One	0.742* (.320)	0.545* (.167)	0.410 (.342)	0.412* (.122)	-0.443* (.200)	1.185	0.649
	Sector Two	1.877* (.558)	0.648* (.241)	0.537* (.197)	0.219 (.191)	-0.207* (.105)	1.982	0.793
	Sector Three	1.242* (.529)	0.754* (.257)	0.604* (.223)	0.068 (.153)	0.321* (.118)	2.092	0.694
	Sector Four	0.844* (.317)	0.518* (.197)	0.592* (.206)	0.387* (.147)	-0.578* (.148)	1.235	0.599
UAE:								
	Sector One	0.872 (.312)	0.645* (.251)	0.777* (.208)	0.815* (.312)	-0.435* (.182)	1.008	0.781
	Sector Two	0.731* (.258)	0.699* (.209)	0.709* (.262)	0.019 (.121)	0.578* (.205)	0.962	0.719
	Sector Three	1.222* (.514)	0.555* (.205)	0.984* (.323)	0.461* (.117)	0.328* (.111)	1.211	0.667
	Sector Four	0.814* (.317)	0.458* (.165)	0.598* (.264)	0.487* (.147)	-0.179 (.148)	1.201	0.684

* Statistically significant at the 5% level .

Table 4.6: Estimated Money demand Function: GCC 1970-98

parameters	γ_0	γ_1	γ_2	γ_3	γ_4	γ_5	γ_6	γ_7	R^2-*adj*
Bahrain	0.154	0.224*	-0.301*	-0.101	-0.085	-0.088*	0.215*	-0.410*	0.701
	(.101)	(.085)	(.108)	(.087)	(.077)	(.042)	(.102)	(.154)	
Kuwait	0.457*	0.178	-0.117	-0.324*	-0.191*	-0.102*	0.085	-0.338*	0.724
	(.201)	(.121)	(.108)	(.119)	(.067)	(.033)	(.065)	(.114)	
Oman	0.557*	0.465*	-0.241*	-0.099	-0.151*	-0.165*	0.313*	-0.387*	0.647
	(.217)	(.198)	(.069)	(.065)	(.054)	(.048)	(.111)	(.118)	
Qatar	0.157	0.451*	-0.209*	-0.164	-0.131	-0.088	0.304*	-0.444*	0.601
	(.121)	(.165)	(.101)	(.131)	(.099)	(.067)	(.134)	(.137)	
S. Arabia	0.101*	0.381*	-0.288*	-0.098	-0.157*	-0.099*	0.057	-0.299*	0.611
	(.042)	(.164)	(.115)	(.059)	(.077)	(.033)	(.038)	(.108)	
UAE	0.087*	0.365*	-0.316*	-0.078	-0.044	-0.091*	0.210*	-0.218*	0.709
	(.039)	(.121)	(.135)	(.049)	(.032)	(.041)	(.087)	(.101)	

* Statistically significant at the 5% level .

Table 4.7: Estimated Imports Function: GCC 1970-98

Parameters	δ_0	δ_1	δ_2	δ_3	δ_4	δ_5	R^2 *-adj*
BAHRAIN							
	0.087	-0.821*	0.041	0.876*	0.365*	-0.432*	0.765
	(.055)	(.324)	(.044)	(.351)	(.102)	(.104)	
KUWAIT							
	0.785*	-0.758*	0.034	0.855*	0.124	-0.387*	0.676
	(.217)	(.285)	(.022)	(.208)	(.084)	(.098)	
OMAN							
	1.058*	-0.774*	0.026	1.212*	0.512*	0.512*	0.698
	(.245)	(.200)	(.029)	(.385)	(.109)	(.107)	
QATAR							
	1.224*	-0.955	0.068	1.205*	0.109	-0.357*	0.706
	(.258)	(.312)	(.042)	(.267)	(.085)	(.099)	
SAUDI ARABIA							
	0.664	-0.697*	0.018	1.257*	0.524*	-0.421*	0.699
	(.441)	(.212)	(.044)	(.228)	(.089)	(.054)	
UAE							
	0.138	-0.608*	0.071	1.099*	0.412*	-0.385*	0.705
	(.098)	(.201)	(.054)	(.286)	(.109)	(.114)	

* statistically significant at the 5% level.

CHAPTER FIVE

FORECASTING ECONOMIC PERFORMANCE OF GCC: STRUCTURAL & BEHAVIOURAL MODELS

I do not know which makes a man more conservative -
to know nothing but the present, or nothing but the past.

J.M. Keynes (1926)

5.1 Introduction

Although the derivation of reliable parameter estimates is often viewed as the primary goal of any econometric research, to many a goal of equal importance is the production of good economic forecasts. Based on the estimated models and findings in Chapter Four, this chapter attempts to measure the future performance of the GCC under different set of assumptions and scenarios.

Prior to elaborating the methodological issues and the derivation of such forecasts, it is important here to clarify few concepts. First, it is useful to distinguish between two types of forecasting - *ex post* and *ex ante*. In terms of time series models, both forecasts predict values of a dependent variable beyond the time period in which the model is estimated. However, the *ex post* forecast is based on the period in which the values of

both dependent and independent variables are known with certainty. In short, *ex post* forecast is an extrapolated forecast based on a given model, providing a means of evaluating the extent of the goodness of the fit of the model. An *ex ante* forecast predicts values of the dependent variable beyond the estimation period, using values of independent variables which may or may not be known with certainty. This may depend on the nature of data or assumptions made on the way the future values of the independent variables may be determined. Although most forecasts invlove some forms of judgemental values, here we attempt to minimise such features and hence derive our forecasts based on econometric estimation procedures. We do not deny the importance of strategic judgemental values in forecasting as has been elaborated by Makridakis & Gaba (1998: 6). Nevertheless, as has been noted by several reaserchers[1], mere judgemental strategies may involve human errors and biases which could lead to damaging consequences and mis-represented forecasts. Moreover, as has been pointed out by Holden et.al. (1990), although decision making on a subjective 'gut feeling' approach may appear to be more popular, there is strong evidence that the more formal approach based on rational 'objective' models gives better results.[2]

Second, a distinction may also be made between *conditional* and *unconditional* forecasts. In an unconditional forecast, values for all the explanatory variables in the forecasting equation are known with certainty. On the other hand, in a conditional forecast, values for one or more explanatory variables are not known with certainty, so that the forecasts are conditional to guesses made on such explanatory variables. In conducting our forecasts for the GCC, our prediction, in the main, will be a conditional forecasting since the future values of our explanatory variables will be based upon a set of predetermined guesses/scenarios. In most cases, as shall be seen later, macro exogenous variables may be forecast on the basis of autoregressive-moving average method or any other time series models.

5.2 Forecasting: An Overview of Methodological Issues

The assumption that all the future values of the explanatory variables - in a given single equation - are known without error, appears to be unrealistic. One may intuitively expect that the stochastic nature of the predicted values of the X matrix will lead to forecasts of Y which are less reliable than in the case of known X. So, for the test of accuracy of the forecast, a series of forecast errors need to be measured. These issues will be considered later on.

In a general linear form, suppose the model

$$y = X\,a + e \qquad (5.1)$$

where y is a T*1 column vector of dependent variable observations, X is a T*K matrix of independent variable observations, and e is a T*1 column vector of error terms satisfying all the classical assumptions. Recall that the OLS estimate of a, shown as □, is given by

$$\square = (X'X)^{-1} X'y \qquad (5.2)$$

Suppose one has a new set of observations or even forecasts/guesses for the independent variables for period T+n, shown as X^*. Assuming that □ remains unchanged over time, then the forecast for the dependent variable, y_F for the entire n period will be given by

$$y_F = X^* \square \qquad (5.3)$$

with the forecast error of

$$\square = y^* - y_F \qquad (5.4)$$

where the actual values of y denoted by y^* will be observed in future.

Since the actual value of y, y^*, can be written as

$$y^* = X^* \square + e^* \qquad (5.5)$$

where e^* is the actual value of the additive error term in the forecast period, we can then write the forecast error as:

$$\square = X^* \square + e^* - X^* \square$$

$$= e^* + X^* \square - X^*(X'X)^{-1} X'y \qquad (5.6)$$

Substituting (5.1) into (5.6), we have

$$\square = e^* + X^* \square - X^*(X'X)^{-1} X'(X\,a + e)$$

$$= e^* - X^* (X'X)^{-1} X'e \qquad (5.7)$$

Given that the additive error terms are uncorrelated over time [$E(ee^*)= 0$], and being homoskedastic [$E(ee') = \sigma_e^2 I$], then the variance of the forecast error can be shown as

$$\sigma_f^2 = \sigma_e^2 [I + X^*(X'X)^{-1} X^{*\prime}] \qquad (5.8)$$

Equation (5.8) implies that the forecast variance depends on the variance of the independent variables in the forecast period. This is to say that the problem of finding the smallest possible forecast error variance is associated with a problem of constrained minimisation using the method of Lagrange multipliers. In order to minimise σ_f^2, one must minimise the matrix product on the right-hand side of equation (5.8) subject to $X^*_1 = 1$. The Lagrange procedure leads to minimum forecast error variance as[3]

$$\min (\sigma_f^2) = \sigma^2 (1 + 1/T) \qquad (5.9)$$

In equation (5.9) as T becomes infinitely large, the minimum forecast error variance approaches the variance of the error term σ^2; implying that infinitely large sample size leads to estimated parameter values approaching the true parameter values, so that the only source of forecast error is the additive error term.

Various measures have been proposed for assessing the predictive accuracy of forecasting models. Most of these measures are designed to evaluate ex post forecasts, that is, forecasts for which the exogenous variables do not have to be forecast. The two commonly used such measures are (a) root-mean-square error (RMSE) and (b) mean-absolute error (MAE), expressed as follows:

$$RMSE = 1/n \sqrt{\Sigma \square^2} \qquad (5.10)$$

$$MAE = 1/n \Sigma | \square | \qquad (5.11)$$

where n being the size of the forecast period.

RMSE is the most popular type of 'quadratic loss function', measuring the square root of the average of the squared values of the forecast errors, which implicitly weights large forecast errors more heavily than small ones. This measure is appropriate to situations in which the cost of an error increases as the square of that error. Another version of this measure is referred to as root-mean-square percent error which simply measures the deviation of forecast variable from its actual time path, but relative to the actual values of the dependent variable.

MAE,on the other hand, measures the absolute values of the forecast errors, which may be misleading if large positive errors cancel out large negative errors giving a close to zero measure of MAE. Similarly, mean-absolute percent error measures the absolute error in relation to the actual values of the dependent variable.

Whether using MAE or RMSE, there is no optimal size for forecast error. In a situation when two different models compared or the same model over two different periods examined, the correct procedure for establishing significant differences in forecast errors is by constrcting an F-statistic as a ratio of the two forecast errors:

$$F \sim RMSE1 / RMSE2$$

In this case if the calculated F exceeds the value of F from the table, then this suggests that model 2 is significantly superior to model 1.

It should be noted that it is entirely possible for an equation that has a very good statistical fit to have a very poor simulation fit. In a given estimated single equation, such an occurrence is quite likely since the true values of the estimated parameters may change even in the short/medium term. So, it is appropriate that a test of parameters stability be conducted prior to forecasting. In Chapter Four our estimators have all been subjected to

stability tests, so that our parameter estimators are expected to remain unchanged (or if any changes, these will be statistically insignificant) throughout our medium term forecasts.

5.3 Scenarios and Assumptions

Although the quantitative forecasting methods is the main focus of this chapter, we are building some scenarios or alternative futures in an attempt to allow for uncertainty. As Armstrong (1985: 66) defines a scenario as 'an account or story about a projected course of action in a possible environment' here our scenarios are based on as realistic as possible range of events which, by and large, have been experienced in the past. As has been argued by Holden et al (1991: 135) the intention of scenario building is that 'decision makers will be made aware of the inherent uncertainty in forecating, so that they will place less confidence in the possibility of any one outcome'.

In order to build a coherent and consistent forecasts of our macro indicators, we offer some scenarios on a limited number of the variables in our models, given in chapter three. These scenarios are primarily based either upon historical values of the variables or on some estimation procedure. Our general framework will be based on two broad scenarios:

boom and bust. As most GCC states are concerned, boom times may well be associated with higher (than expected) oil prices, leading to higher incomes, consumption and hence benefiting other sectors of the economy.[4] On the other hand, bust periods may be associated with lower (than expected) oil prices leading to lower incomes, consumption, government spending.

Depending on the length and the depth of a bust or a boom, these economies can be affected differently. For instance, if the oil prices fall dramatically and exhibit a medium term downward trend, then one would expect to observe acute pressures being exerted on the devaluation of the GCC currencies (in particular, against the Yen and the Euro) , leading to deficits in their balance of payments.[5] The direct effect of oil price movements can be seen in a careful examination of the relative prices, rather than inflation rates alone; as the latter consists of some small but nevertheless significant government subsidies. By the analysis made in Chapter Two, the higher the oil prices, the lower will be the relative prices and hence leading to improvements in the GCC's balance of payments. This may or may not improve the extent of intra-trade in the GCC, as most states have yet to diversify significantly away from oil, hence to enhance complementarity and increase their non-oil exports.[5]

Ironically, as oil prices in the 1980s and the 1990s stablised/slowed down, the GCC on the whole managed to concentrate more heavily on their non-oil sectors. As shown in Chapter Two, the contribution of oil to GDP in the GCC states was halved between 1970 and 1995. Although a large proportion of this share has gone to oil related industries (fertilizers, pertochemicals, etc.), the case for the 'reverse Dutch disease' has been verified.[6] Ideally, the fall in the share of oil should have been picked up by the traditional sectors of the economy of the GCC, but, as shown in Chapter Two, a significant proportion of the share has gone to the building and operational activities of oil-allied sectors.

Although we have used a large number of variables and several models, in building our scenarios we only concentrate on four general cases. The four scenarios are as follows:

(I) explanatory variables follow their past pattern;

(II) oil price shocks;

(III) US$ shocks;

(IV) introducing income/corporation tax.

Under scenario (I) we assume the future values of some or all our explanatory variables are determined on the basis of their past values. In this case we attempt to derive the forecast values of such explanatory variables in relation to the findings of the unit root tests shown in Chapter Three. For example, if a variable exhibits first-order stationarity, then the model upon which the forecasts are based will be of first-order autoregressive (AR1) nature. In capturing the error effects, we also incorporate a moving average (MA) part in our model. Since there are no seasonality effects in our models (annual data used), the appropriate model will be of autoregressive-integrated-moving average ARIMA (p,d,q); where p, d and q represent the AR, the differencing order and MA orders of the model. In elaborating this, suppose that variable X exhibits first order stationarity and we wish to forecast its future values based on ARIMA (1,1,1). This can be shown by:

$$\Delta X_t = \alpha + \beta X_{t-1} + \gamma \varepsilon_{t-1} + \varepsilon_t \qquad (5.12)$$

Where β is expected not to be significantly different from one. In the light of estimated findings based on unit-root test- offered in Chapter Four – the above model tends to match more coherently with our requirement as in most cases I(1) was found to go our macro data.

Having derived the forecast values of explanatory variables in this way, we will then substitute them in their respective estimated models – expressions (4.7) to (4.10) of Chapter Four- to get the forecast values of the dependent variables – here being consupmtion (C), labour productivity (Q), money supply (MS) and intra imports (M).

Under scenario (II) it is assumed that, other things being equal, a shock in the oil price (via excess demand or excess supply) initially affecting the relative prices in the GCC and then causing different effects on the economy via our models. Here we assume three sub-scenarios:

(a) oil shock caused by excess demand;

(b) oil shock caused by excess supply;

(c) no shock.

In case (a) the sudden increase in demand pushes oil prices up which is expected to cause a boom in the GCC states (at least in the short run). In case (b) the sudden rise in supply of oil (or fall in demand) causes oil prices to fall and hence leading to a bust (at least in the short run). In case (c) we assume there are no significant oil shocks and hence oil prices move in line with their long run pattern. Case (c) is similar to scenario (I) where future oil prices follow a smooth ARMA structure. In other words,

case (c) is redundant here as it has already been taken into consideration under scenario (I).

In scenario (III) we allow for shocks in US$ affecting the GCC economies. As established in Chapter Two, the GCC economies are very closely linked with US$ via petro-dollars. This is to say that the GCC currencies are fixed against US$ and hence any revaluation or devaluation of US$ against major currencies could have a directly significant effect on the GCC's trade with the rest of the world. Conversely, it can be argued that during the period of high oil prices when oil revenues (petro-dollars) have increased, the excess supply of US$ in international markets may lead to the lowering of the value of US$ and hence causing downward pressures on the GCC currencies against the rest of the world. Once again, three sub-scenarios may be established here:

(a) depreciation of US$;

(b) appreciation of US$;

(c) no significant change in US$.

As explained earlier, cases (a) and (b) can either be caused via significant changes in the price of oil or can be caused by a whole host of factors in international markets. In case (a) the lowering of the value of US$ against major currencies will have an adverse effect on the GCC imports from the

rest of the world, and hence may lead to improvements in intra-GCC trade. Any improvement in the value of US$ can have a positive impact on the GCC (at least in the short run) as imports from the rest of the world become cheaper. This, on the other hand, may have an adverse effect on the price of oil exchanged in US$. Moreover, this may lead to the lowering of incentive for intra-GCC trade, as trade with the rest of the world becomes economically more attractive. However, if these shocks have longer lasting effects on the economy, then intra-GCC trade would be affected, otherwise short-term one-off shocks may not necessarily lead to such drastic consequences. So, in applying our scenarios, we need to establish not only the extent of the shock, but also the duration of the shock. For example, the oil shock of the 1973 has been characterised by its massive extent (i.e. oil prices trebled within few months) and its long lasting effects as the oil prices increased or remain the same (in real terms) for several years afterwards.

Under scenario (IV) we assume that the governments of the GCC eventually introduce some form of taxation, here assumed to be income/corporation tax. This will have direct effect on incomes, consumption and profits. Depending on the size of the multiplier, introduction of taxes is expected to lead to a general fall in both inter and

intra trade. Depending on the scale of income/corporation tax, adoption of this strategy may indeed reduce the attractiveness of working in the Gulf states for a large number of expatriates, particularly those nationals of the EU and the USA. The underlying reason behind this scenario is that as these states attempt to diversify away from oil their general oil revenues will be hampered significantly and hence taxation would be the only alternative means of revenue generation available to them.

5.4 Evaluation of the Findings

The findings here are presented on the basis of the scenarios given earlier. In most cases the forecast margin of error, RMSE, fall between 0.25% and 2%; however, if this measure exceeds the upper limit, it will be reported.

5.4.1 Scenario I: variables follow past patterns

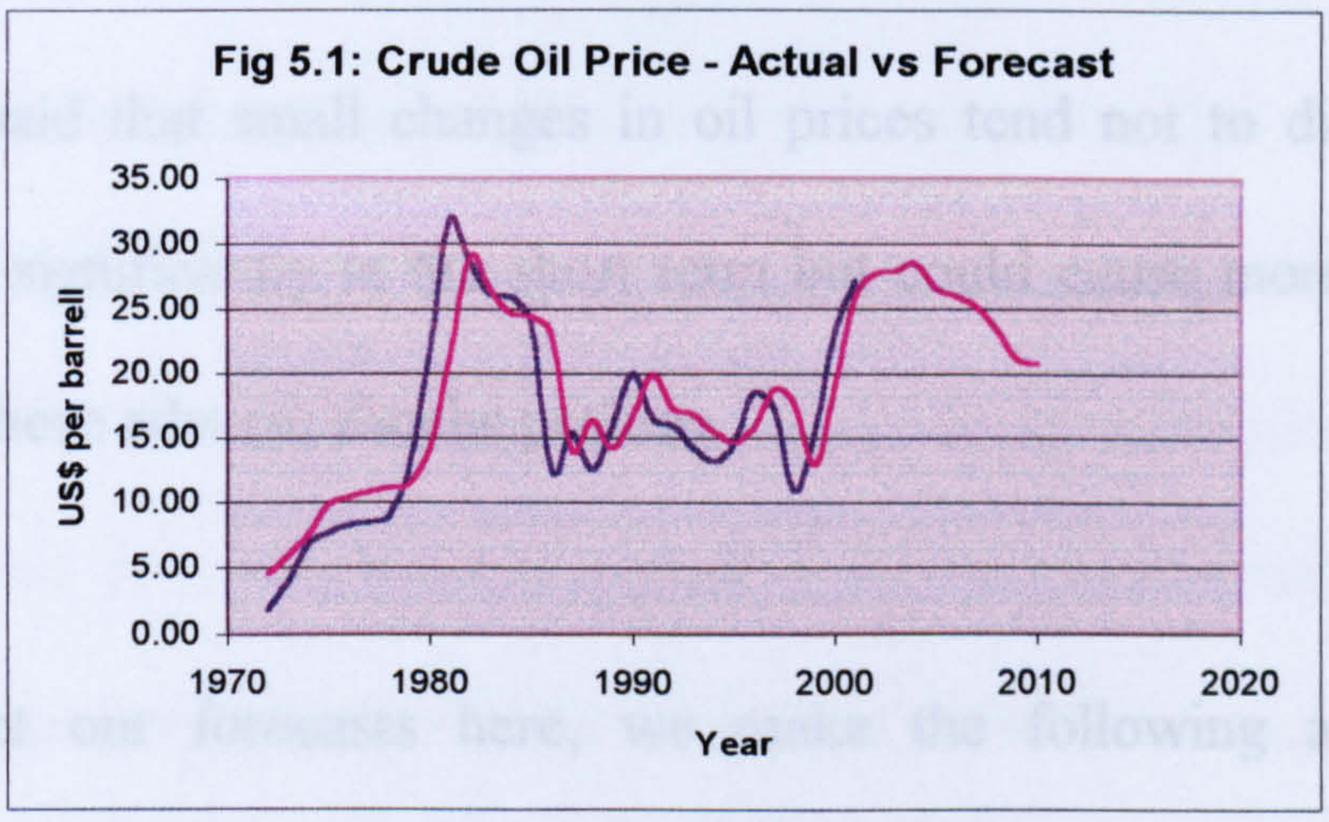
As explained earlier, under this scenario we derive the forecast values of our explanatory variables on the basis of ARIMA models. Since most of our variables exhibit first order stationarity, the appropriate model for forecasting will be based on ARMA(1,1,q), with q taking different integers depending on the structure of the error terms inherent in our variables.

The forecast period covers the 11 year between 2000 and 2010.

Table 5.1 presents the estimated results of our forecasts based on ARIMA and our structural equations shown in Chapter Three. As explained earlier, our explanatory variables (GDP; relative prices, RP; retail price index, Π) have been forecast on ARIMA and then incorporated into our equations to give estimated forecasts for our three dependent variables (consumer expenditure, C; intra-GCC imports, M; and money supply, MS). In Table 5.1 the forecasts are offered in average annual percentage rates for the given variables for each and every GCC member. The period 1970-79 is shown to have been an inflationary period for all these countries (Bahrain and Kuwait somewhat excepted) as both money supply and price index have exhibited higher than their historic average growth rates. This has also been supported by higher GDP and consumption growth rates for the same period. Generally, the 1980s and 1990s have seen much lower rates of price inflation, money supply, GDP and consumption, being very much in line with those observed in the OECD countries over the same period. In the 1980s the GCC countries have experienced significant improvements in their intra-trade, averaging at around 8-10 percent per annum. However, this growth has been slowed down significantly over the 1990s, where the average annual growth rate falls to around 1-2 percent. On the contrary, as shown in Chapter Two, over this period the GCC's international trade increased significantly.

The forecast period has been divided into two sub-periods of 2000-2005 and 2006-2010. According to our forecasts, the GCC countries will expect to slow down in growth of GDP, retail price index, money supply and consumption. One important finding here is that in all cases, relative prices are forecast to fall significantly on annual basis, seemingly indicating that these countries will become more competitive at international markets.[7] As the relative prices here defined as the ratio of export prices (oil price used as a good proxy for the overall exports) to the import prices (the OECD industrial import index used), then the fall in relative prices may mean that either import prices are expected to rise or the crude oil price will fall in real terms. An inspection of the relative prices has suggested that the fall in relative prices in the GCC (UAE excepted) may well be due to the latter. Figure 5.1 gives a historical price of crude oil against its forecast value for the period 1972-2010.[11] As the forecasts suggest (based on a simple ARMA model) the oil prices are expected to fall and that will give rise to fall in relative prices as shown in Table 5.1. As the forecasts suggest, these countries will experience further deterioration in their intra-trade, as for the entire period the average annual growth rates plummit to as little as 2.5 percent. Kuwait, Saudi Arabia and the UAE tend to exhibit much lower rates of growth in intra-trade than the

other three countries over the forecast period. Finally, the forecast period is indicative of lower rates of inflation and money supply for all the GCC countries, very much in line with the OECD.



5.4.2 Scenaio II: Oil price shocks

As mentioned earlier, under this scenario we examine two cases: (a) shocks caused by excess demand, hence pushing up oil prices; and (b) shocks caused by excess supply, leading to a fall in oil prices. Both cases have been experienced by the GCC states in the past, and the outcomes on the economy proved to have been significant. The oil shock of the early 1970s generated an unexpectedly massive wealth for the GCC states as the oil prices were quadrupled within a space of two years. Moreover, during the period 1979-1983, oil was priced at much higher rates than its historic

average price. The oil prices dropped to around $12-$20 per barrel over the period 1985-1996, with a rather worrying adverse effect on the GCC economies as the Saudi economy, in particular, had to cope with a constrained public budget.[8] All can be said is that since the mid-1980s the GDP growth in the GCC has slowed down to that of the OECD level, as crude oil price is somewhat stabilised around its real historic average. So, it can be said that small changes in oil prices tend not to disturb these economies significantly in the short term but could cause more damaging effects as these adverse shocks prolong.

To conduct our forecasts here, we make the following assumptions primarily in consideration of the historic oil price data since 1970:

(i) the shock occurs in the beginning of the year 2000;

(ii) world prices change one year after the shock;

(iii) by a significant excess demand oil shock we refer to an increase in the price of crude oil by as much as 40%;

(iv) by a significant excess supply oil shock we refer to a decrease in the price of crude oil by as much as 25%;

(v) the shock will be of a one-off case and will last for one calender year;

(vi) oil reserves have no effect on re-stablising the oil price;

(vii) we are only interested in effects of shocks on income and consumption; and

(viii) there remains a long run relationship between GDP and the relative price.[10]

In consideration of the above assumptions, Tables 5.2 and 5.3 offer forecasts of relative price, GDP and consumption under the cases of excess demand and of excess supply shocks, respectively. Three main points need to be highlighted here. First, under assumption (ii), an increase in oil prices is expected to push up the industrial countries' prices in the next period, and that in the later years offset relative prices in the GCC either partially or totally. Second, by assumptions (iii) and (iv), according to the past experiences, any rises in crude oil price of about 40% and any falls in crude oil of around 25% can be regarded as highly significant in both improving or deteriorating the economies of GCC. Finally, the aim of estimating forecasts of GDP, relative price and consumption here is to investigate how long it would take the GCC economies to return to their initial equilibria following a significant oil shock.

A careful examination of Table 5.2 reveals the following main points. First, in all cases, the relative prices decline between 2.9% (Oman) and 4.3% (Saudi Arabia) over the forecast period 2000-02. Second, a 40% rise in the oil price leads to significant increases in both consumption and GDP in all the six countries. Over the forecast period 2000-02, consumption rises between 3.2% (Bahrain) and 12.2% (Qatar). GDP, however, does not rise as much; nevertheless Qatar experiences a staggering GDP growth of around 4.5%. Third, as the results based on forecast period 2003-05 show, in most cases, it takes both GDP and consumption nearly 3 years to return to their pre- shock growth patterns. As for the relative prices, there is no clear cut pattern: Bahrain and Oman exhibit rates in forecast period 2003-05 similar to those of pre-shock period; where the other four countries fail to return to their original rates. On average, however, the GCC exhibits a much lower growth rate in RP in 2003-05 compared to the pre-shock period.

An examination of Table 5.3 leads to the following conclusions. First, a 25% fall in the price of oil leads to the worsening of relative prices in all GCC countries over the forecast period 2000-02 in the region of 1.4% - 3.3%. Second, in all cases consumption is seen to slow down significantly over the first two years following the shock. The serious cases are

experienced by Kuwait, Oman and Qatar, as their pre-shock consumption annual growth rates of 6%-10% drops to 0.6%-2.2%. Third, GDP growth rates also fall dramatically following the shock in all countries. On average, the GCC's GDP growth rate of 2.1% prior to the shock drops to a mere 1% over the forecast period 2000-02. Finally, with the exception of Kuwait and UAE, both GDP and consumption are shown to recover over the period 2003-05 in the other four countries. The relative prices, RP, in all cases shown to have improved over the forecast period 2003-05 as the effect of the oil shock is seen to be fading out.

On the whole, when considering the findings offered in both Tables 5.2 and 5.3, it can be said that oil shocks of significant magnitudes can have serious impact on the GCC economies lasting up to two years. However, as the findings suggest, the effective life of such shocks may not exceed 3-4 years.

5.4.3 Scenario III: US$ Shocks

As discussed earlier, two sub scenarios can be thought of here: devaluation and revaluation of the US dollar. Since the GCC currencies are tightly tied with the US dollar, a 1% devaluation of the US$ is represented by a 1% devaluation in any GCC currencies. For paratical purposes here we consider one case only: US$ depreciates in value by 10%. The

assumption made here is that the once-and-for-all shock in the US$ has occurred in the beginning of the year 2000. Our main interest here is to examine how such a shock in the value of US$ would affect the growth rates of the member states and the GCC intra-trade. The forecasts are based on the use of the estimated imports function shown in Chapter Four as Table 4.7.

Table 5.4 gives the results of forecasts on growth rate (GDP) and the intra-trade (M) when a shock of 10% drop in the value of US$ has occurred in the year 2000. Similar to Tables 5.2 and 5.3, in this Table we also take the period 1995-99 as our base period and 2000-02 and 2003-05 as our two forecast periods. The findings in this Table may be interpreted as follows. First, all the GCC countries experience lower GDP growth following the shock. On average, a 10% fall in the value of US$ would lead the lowering of annual GDP growth by three folds in the first two years following the shock. Second, the fall in the US$ has varying effects on GCC intra trade, experienced by each member. Where Kuwait and Oman exhibit marked improvement in their intra trade, the other members experience less significant changes in their intra trade. On average, however, as the findings suggest, a 10% fall in the US$ would lead to 50% annual increase in intra trade amongst the GCC members in the first two

years following the shock. Finally, with the exception of Kuwait, other members manage to return to their pre-shock growth rates over the forecast period 2003-05. This is to say that it will take the GCC members somewhere in the region of 3-4 years to return to their original equilibria following a fall of 10% in the US$.

5.4.4 Scenario IV: Introduction of Income Tax

As explained earlier, this scenario may appear to be politically undesirable, but it has been regarded as a viable option amongst many Middle Eastern economists. It has been argued that as the involvement the GCC governments in social welfare programs have markedly increased over the past decade or so, then some form of socio-economic correction by a means of taxation seems unavoidable. Moreover, as the GCC states attempt to effectively diversify away from oil, it is expected that a sharp fall in government revenues may force these states to introduce some form of taxation as a substitute for oil revenue.

Considering our estimated econometric models shown in Chapter Four, an introduction of income tax would directly reduce disposable incomes and consumer spending, and have knock on effects on output and profits. Here, based on our estimated consumption function, expression (4.8) and Table 4.4, we wish to forecast the future spending (C) and incomes (GDP)

as a result of introducing income tax of 10%, uniformally applied in all GCC states. Moreover, we wish to forecast the indirect effect of such taxation on GCC intra trade (M), using expression (4.10) and Table 4.7. The results of such forecasts are offered in Table 5.5.

The findings in Table 5.5 may be summarized as follows. First, an introduction of income tax of 10% leads to fall in both incomes and consumption by as much as 5%-13% in the first two years after the shock, but continue to reduce output and consumption at lower rates. Oman and Qatar show much greater rates of decline in their consumption and GDP over the forecast period 2000-02 compared to the others. Second, intra trade has shown to deteriorate as incomes and consumption fall generally in the GCC, the rates of decline varies substantially from one member to another. Nevertheless, on average, the GCC intra trade falls by as much as 8% per annum over the forecast period 2000-02; then at slightly lower rate in the following years.

On arriving at our estimated forecast values we have not measured the effects of such taxation on profits. Nevertheless, future values of GDP – as a measure of output - to a great extent embeds and includes loss of profits resulting from new taxes.

5.5 Summary and Conclusions

In this chapter an attempt has been made to measure the future performance of the GCC under different conditions and scenarios. In achieving this objective, an overview of some relevant forecasting techniques was offered. In general, both conditional and unconditional types of forecasting were used. In conducting our forecasts four scenarios were set: (i) individual macro variables following their past pattern; (ii) forecasts in the presence of a significant oil shock; (iii) forecasts based on a significant shock to the US$; and (iv) forecasts based on the assumption that a form of income/corporation tax being introduced.

In conducting forecasts based on scenario (i) the auto-regressive integrated moving average (ARIMA) model was applied. Of some important issues arising from this type of forecast was that, other thing equal, both GDP and inflation rates tend to fall gradually and that the GCC intra trade plummet further in the long run. Both scenarios (ii) and (iii) should be treated as external shocks with rather varying impact on different members of the GCC. Under scenario (ii) we allowed the oil price to increase by 40% and decline by 25%, as these values were set on the basis of the historical pattern of oil price since 1970. As shown in Tables 5.2 and 5.3,

such one-off oil shocks were found to have serious effects on the overall economy and could last for up to 3-4 years. In particular, both relative prices and GDP were found to be highly sensitive to such shocks.

Under scenario (iii) we learnt that a one-off 10% drop in the value of US$ can markedly improve the GCC intra trade somewhere in the region of 30%-40%, but such shock can seriously reduce GDP growth over the first two years following the shock. Once again the effective life of such shocks was found to be as long as 2-4 years. Finally, under scenario (iv) we learnt that an introduction of 10% income tax could seriously lower GDP and consumption growth rates in the short term. The effectiveness of such tax will be less marked in the longer term. Introduction of income tax was shown to be an effective decelerating factor in GCC intra trade.

In short, as the overall findings suggest, the one-off shocks can be effective in the short term but in most cases lose effectiveness in the long run. Moreover, such shocks are not necessarily effective enough in creating sustained improvements in GCC intra trade. Some other forms of stimulation is needed in these economies in order that the said objective is fully achieved. Some certain aspects of such policies will be discussed in the final chapter.

Endnotes

1. For example see MacGregor & Armstrong (1994), and Webby & O'Connor (1996).

2. For a summary of different types of economic/business forecasting techniques, see Holden et.al. (1990).

3. For a detailed derivation of forecast error see Intriligator (1972).

4. This may not always be true as higher oil prices may lead to the so-called 'Dutch disease' where one sector in the economy benefits at the expense of the other sectors. For further understanding of this concept see Looney (1990).

5. The example given here does very much resemble the periods 1985-88 and 1990-94 where oil prices dropped well below the average historic value causing adverse effects on most GCC economies.

6. As indicated in Chapter One, Bahrain has been the most successful GCC state in achieving this objective.

7. In this case, depression in the leading sector (oil here) may create an environment where other sectors of the economy begin to develop or revitalise. In particular, see Al-Gaeed (1991), and Al-Sabah (1988) for the explanation and testing of the reverse Dutch disease.

8. It must be noted that changes in oil prices may have significant effect on the relative prices here. Our forecasts here, however, assumes (in general) that oil price inflation will be slower than the non-oil sector's price index.

9. See Saudi Arabia Country Profile, EIU, 1997.

10. In order to determine the direct impact of oil shocks on GDP, we ran a cointegration test between GDP and the relative price. In all cases LR test indicated one cointegrating equation at the 5% level. Consequently the long run GDP-relative price elaticity estimated to vary between -0.1 and -0.4.

11. These findings are very much in line with other forecasts of crude oil prices conducted by different think tanks and forecast agencies.

TABLE 5.1: Annual Average Growth Rates of selected macro indicators
Based on ARIMA models
GCC States 1970 – 2010

BAHRAIN

	GDP	RP	Π	MS	C	M
1970-79	14.7	2.4	5.2	1.1	14.3	32
1980-89	0.3	-1.3	0.2	5.4	2.1	14
1990-99	1.4	1.2	2.6	5.2	2.7	-2.6
2000-05	-0.2	0.4	1.6	2.1	0.5	1.6
2006-10	0.3	-0.8	0.6	1.1	0.7	11
RMSE	0.89	2.23	1.22	1.87	1.23	1.23

KUWAIT

	GDP	RP	Π	MS	C	M
1970-79	13.1	-0.4	1.2	28.2	27.7	18.1
1980-89	1.2	0.2	-1.3	10.1	6.1	6.2
1990-99	2.6	0.6	2.2	7.4	8.5	-2.1
2000-05	1.2	-3.4	-1.2	-0.1	10.6	-0.2
2006-10	1.2	-1.4	-0.6	-0.3	3.4	0.5
RMSE	2.31	3.21	0.98	2.11	1.87	0.87

OMAN

	GDP	RP	Π	MS	C	M
1970-79	1.6	1.4	15.7	21.2	12.7	38.2
1980-89	2.2	-2.3	-1.9	18.3	10.1	11.1
1990-99	1.9	1.2	0.9	4.3	9.5	2.8
2000-05	0.9	-0.7	0.6	0.8	11.6	2.9
2006-10	0.5	-0.8	0.5	0.9	3.4	0.5
RMSE	1.39	0.91	0.48	1.99	2.17	1.07

QATAR

	GDP	RP	Π	MS	C	M
1970-79	9.4	4.8	7.1	27.7	11.2	15.5
1980-89	1.7	0.3	-0.5	10.2	8.1	21.5
1990-99	1.3	1.0	1.3	4.5	12.0	7.7
2000-05	1.3	-2.1	1.5	1.4	14.2	8.4
2006-10	1.2	-1.1	0.6	0.8	6.4	3.5
RMSE	3.09	1.98	0.98	2.09	1.87	2.07

S. ARABIA

	GDP	RP	Π	MS	C	M
1970-79	13.2	4.3	5.6	57.4	69.6	8.5
1980-89	-0.4	-4.1	-3.9	10.3	1.3	2.1
1990-99	0.5	4.2	3.8	4.6	3.4	0.9
2000-05	1.9	-2.7	2.6	1.8	1.6	0.5
2006-10	1.5	-4.2	1.5	1.9	3.0	0.4
RMSE	1.39	0.91	0.48	1.99	2.17	1.07

UAE

	GDP	RP	Π	MS	C	M
1970-79	23.9	4.6	3.7	33.6	17.4	4.8
1980-89	2.6	2.4	7.2	17.1	23.4	12.1
1990-99	3.3	0.5	0.7	7.6	5.2	4.9
2000-05	0.9	1.7	1.1	3.8	4.6	1.5
2006-10	0.5	1.2	1.0	2.9	2.3	0.7
RMSE	1.09	1.12	0.55	0.98	1.34	2.03

GCC (arithmatic average)

	GDP	RP	Π	MS	C	M
2000-05	1.01	-1.13	1.11	1.63	7.18	2.45
2006-10	0.86	-1.06	0.40	1.21	2.86	2.62

TABLE 5.2: Annual Average Growth Rates in selected macro indicators as a result of 40% increase in crude oil price GCC States 1995-2005

BAHRAIN

	RP	C	GDP
1995-99	0.9	1.7	1.2
2000-02	-3.3	3.2	2.8
2003-05	0.9	1.3	0.9
RMSE	0.77	1.33	0.57

KUWAIT

	RP	C	GDP
1995-99	0.8	6.6	2.5
2000-02	-4.2	6.9	3.9
2003-05	2.1	4.1	2.1
RMSE	2.21	1.33	0.99

OMAN

	RP	C	GDP
1995-99	1.1	7.5	2.2
2000-02	-2.9	8.2	3.5
2003-05	1.8	5.8	2.1
RMSE	0.88	1.55	1.09

QATAR

	RP	C	GDP
1995-99	1.4	10.2	2.1
2000-02	-3.8	12.2	4.4
2003-05	2.8	8.8	2.3
RMSE	1.33	1.22	2.38

S. ARABIA

	RP	C	GDP
1995-99	3.6	2.8	0.9
2000-02	-4.3	3.8	2.1
2003-05	2.1	2.2	1.1
RMSE	1.07	1.43	0.99

UAE

	RP	C	GDP
1995-99	0.8	3.8	3.1
2000-02	-3.3	4.7	4.3
2003-05	-1.3	3.9	2.9
RMSE	1.41	1.02	0.89

GCC (arithmatic mean)

	RP	C	GDP
1995-99	2.3	5.2	2.1
2000-02	-2.6	6.7	3.4
2003-05	1.2	3.8	3.7

TABLE 5.3: Annual Average Growth Rates in selected macro indicators as a result of 25% decrease in crude oil price GCC States 1995-2005

BAHRAIN

	RP	C	GDP
1995-99	0.9	1.7	1.2
2000-02	1.4	0.8	0.7
2003-05	-1.1	0.9	1.2
RMSE	0.87	1.12	0.66

KUWAIT

	RP	C	GDP
1995-99	0.8	6.6	2.5
2000-02	1.5	0.7	0.3
2003-05	0.4	3.2	1.2
RMSE	1.55	1.04	0.87

OMAN

	RP	C	GDP
1995-99	1.1	7.5	2.2
2000-02	2.7	0.6	-0.7
2003-05	0.9	2.8	1.7
RMSE	1.38	1.43	1.87

QATAR

	RP	C	GDP
1995-99	1.4	10.2	2.1
2000-02	3.3	2.2	1.6
2003-05	0.5	5.5	3.4
RMSE	1.21	1.87	1.82

S. ARABIA

	RP	C	GDP
1995-99	3.6	2.8	0.9
2000-02	3.2	1.1	0.7
2003-05	-0.9	3.1	1.6
RMSE	1.27	1.33	1.11

UAE

	RP	C	GDP
1995-99	0.8	3.8	3.1
2000-02	3.1	1.7	1.0
2003-05	-0.7	2.7	1.8
RMSE	1.18	1.21	0.91

GCC (arithmatic mean)

	RP	C	GDP
1995-99	2.3	5.2	2.1
2000-02	2.6	1.2	1.2
2003-05	-0.2	3.1	1.6

TABLE 5.4: Annual Average Growth Rates in selected macro indicators as a result of 10% fall in US$ GCC States 1990-2005

BAHRAIN

	GDP	M
1990-99	1.4	-2.6
2000-02	0.8	-1.1
2003-05	1.2	-2.0
RMSE	0.88	1.27

KUWAIT

	GDP	M
1990-99	2.6	-2.1
2000-02	0.9	0.5
2003-05	1.5	-0.8
RMSE	1.58	1.41

OMAN

	GDP	M
1990-99	1.9	2.8
2000-02	0.6	3.4
2003-05	1.3	3.1
RMSE	1.55	1.46

QATAR

	GDP	M
1990-99	1.3	7.7
2000-02	0.7	7.9
2003-05	1.2	7.5
RMSE	0.99	1.08

S. ARABIA

	GDP	M
1990-99	0.5	0.9
2000-02	-0.7	1.2
2003-05	0.8	1.2
RMSE	1.12	1.09

UAE

	GDP	M
1990-99	3.3	4.9
2000-02	1.8	5.1
2003-05	2.9	5.0
RMSE	1.07	1.22

GCC (arithmatic mean)

	GDP	M
1990-99	1.8	2.1
2000-02	0.5	3.1
2003-05	1.5	2.6

TABLE 5.5: Annual Average Growth Rates in selected macro indicators as a result of introduction of 10% income tax GCC States 1990-2005

BAHRAIN

	C	GDP	M
1990-99	2.7	1.4	-2.6
2000-02	2.5	1.2	-3.0
2003-05	2.4	1.1	-2.8
RMSE	1.44	1.52	1.25

KUWAIT

	C	GDP	M
1990-99	8.5	2.6	-2.1
2000-02	8.0	2.2	-2.4
2003-05	7.9	2.0	-2.6
RMSE	1.87	1.54	1.64

OMAN

	C	GDP	M
1990-99	9.5	1.9	2.8
2000-02	8.1	1.5	1.9
2003-05	6.5	1.4	1.5
RMSE	1.08	1.12	0.89

QATAR

	C	GDP	M
1990-99	12.0	1.3	7.7
2000-02	10.8	0.9	6.5
2003-05	10.4	0.8	6.2
RMSE	1.05	1.24	1.54

S. ARABIA

	C	GDP	M
1990-99	3.4	0.5	0.9
2000-02	3.0	0.4	0.6
2003-05	2.8	0.4	0.5
RMSE	0.88	0.76	1.02

UAE

	C	GDP	M
1990-99	5.2	3.3	4.9
2000-02	4.8	2.9	4.2
2003-05	4.6	2.6	4.0
RMSE	1.21	1.65	1.61

GCC (arithmatic mean)

	C	GDP	M
1990-99	6.7	1.8	2.1
2000-02	6.2	1.5	1.4
2003-05	5.9	1.4	1.1

CHAPTER SIX

POLICY IMPLICATIONS: CURRENT AND FUTURE PROSPECTS

6.1 Introduction

Since its establishment in 1981, most Middle Eastern regional economists have been wondering what form of economic integration would the GCC ultimately arrive at. As discussed earlier, a dominant thesis on the formation of GCC places a significant emphasis on the strategic political dimension of the GCC, arguing that formation of GCC has been to create a strong political front against possible military aggressions by either Iran or Iraq on the southern Gulf states. According to this thesis, therefore, any initial economic benefits accrued from such a formation is either non-existent or limited. Moreover, according to this hypothesis, any future economic gains/developments derived from such a formation may only be the spill-over effects of a political union amongst few small economies.[1]

As has been argued earlier, despite lack of complemenarity amongst these economies, some form of economic integration appears to be beneficial for such states. This is because there are similarities in language, culture

and socio-political backgrounds that form a solid foundation upon which the peoples of these states may interact. A good example of such a union amongst southern Gulf states took place in 1971 when the seven Sheikhdoms (including Dubai and Abu Dhabi) formed a full economic union of the United Arab Emirates (UAE). The UAE enjoys a single currency (Dirham) and a central bank which controls the overall monetary policy. The President resides in Abu Dhabi (the capital city) and the Vice-President in Dubai. The Parliament is formed on the basis of the proportional representation of the peoples of these seven sheikhdoms. Major government offices and activities are placed in Abu Dhabi whilst trade and light manufacturing is centred around Dubai and other smaller sheikhdoms. The success of the UAE over the past few decades, according to some Arab economists, has been a driving force behind the idea of formation of a larger economic community with Saudi Arabia acting as the leader.

As has been demonstrated in the earlier chapters,[2] to date the economic successes of the GCC has been rather limited: intra trade has grown slowly; diversification away from oil though successfully achieved by Bahrain and the UAE, it has been slow for Saudi Arabia and other states; and finally tariff unification and setting up customs laws is not fully completed after nearly two decades of debates and discussions.

In the earlier chapters we have investigated the performance of the GCC mainly in the light of examining some major macro indicators. In this chapter, however, we aim to investigate broadly on some fundamental factors determining strengths and weaknesses of the GCC from different economic and socio-political angles. Examination of this kind may enable us to identify areas in which the GCC can eliminate its weaknesses and hence enhance its strengths.

6.2 Socio-Political Factors

There remain a large number of factors giving rise to some form of socio-political problems in so far as GCC is concerned. Fortunately, a smaller and hence less significant number of such factors are external and hence outside direct control of the GCC members. First and the most prominent external factor lies on the question of leadership in Iraq and its potential threat to the region. Both Saudis and Kuwaitis are particularly sensitive to Iraq and have so many times openly criticised Saddam Hussein and have urged the Iraqi people to overthrow the Baath regime. Secondly, the recent developments and liberalisation in Iran has meant that to most GCC members the Islamic Republic of Iran is no longer of any potential threat to their livelihood. The recent visits of President Rafsanjani of Iran to Saudi Arabia and the UAE has further improved both political and

economic relations of these neighbouring Gulf states. Thirdly, although the GCC states have no direct involvement in the Arab-Israeli conflict, the recent disturbances between Israel and Palestine has led Saudis as well as other GCC members to openly criticise the US peace process in the Middle East.[3]

A large and significant number of problematic factors are internal and mostly relate to Saudi Arabia. Whilst other GCC countries have made positive efforts in opening up their economies and enhance political participation, Saudis have been very slow to political and democratic changes. This is mainly because the Saudis regard themselves as the leading force in the Islamic world and hence any sudden dramatic change away from the Islamic *sharia* could deeply jeopardise their domestic and international stance.[4] Moreover, as Saudis are rapidly developing and favouring their domestic industries, they have been most reluctant in complying with removal of all customs duties amongst GCC members. This form of protectionism has led to further division amongst the GCC members. According to the EIU estimates, the Saudis are at least twice as protective as the other GCC states and that has made setting up common external tariffs an extremely difficult task.[5]

6.2.1 Saudi Arabia: in search of a delicate balance

Saudi Arabia has been governed by an absolute monarchy since 1932. King Faisal who resumed power in 1964 is regarded as the leader of the modern Saudi Arabia. When the October 1973 Arab-Israeli war broke out the US continued to give financial support to Israel, in retaliation Saudi Arabia led the other Arab petroleum producing states to cut off oil sales to the US and other Western countries. Later in 1974, the US and Saudi Arabia signed an economic and military co-operation agreement which guaranteed the kingdom support in return for uninterrupted oil supplies.

The domestic politics is centred around three pillars: (i) the Council of Ministers; (ii) the Basic Law; and (iii) the Consultative Council. The Council of Ministers holds both legislative and executive power. Ministers are appointed by, and accountable to, the king, who can veto any of the council's decisions within 30 days. The Council members are chosen from the royal family or close relatives. The Basic Law, established in 1992, is the closest approximation to a written constitution, apart from the Islamic *sharia* law, which is considered to be the ultimate arbiter of government and state affairs. The Basic Law is divided into five main chapters: monarchy; the Saudi family; economic principles; the

authorities of the state; and financial affairs. Finally, the Consultative Council is similar to the house of representatives but with a major difference: the 90 representatives are not elected but appointed by the king to serve for four years. Most of the members continue to be current or former senior government officials and highly educated individuals closely associated with tribal leaders. The council has only an advisory function, and its decisions and recommendations are accepted only if they comply with those of the Council of Ministers and the king. The council may require the king's approval for access to government/official documents. In addition, the recent move in establishing of 13 regional councils, headed by regional governors, has given some, though limited, autonomy to the highly populated regions. A large proportion of seats on the regional councils, allocated by the king, has gone to local tribal leaders and members of prominent merchant families.[6]

Although Saudi Arabia remains an absolute monarchy, the royal family tries to govern by consensus. The ruling family is aware of political opposition from various religious elements, liberal business elite, western educated citizens, foreign workers, and other politically motivated citizens. Amongst the religious factions, the Islamist opposition is the most powerful threat to the ruling family. The government anticipates that the religious establishment to support its major policy decisions and

also expects that the religious leaders and religious scholars can keep the more radical clergy under control. The Gulf war in 1991 and consequently a greater presence of the US and European forces in Saudi Arabia, has led to ever increasing vociferousness of the Islamist opposition. It is believed that the two bombing incidences in 1995 and 1996 near US military bases in Saudi Arabia may have been orchestrated and conducted by the Islamist and other religious minority.[7]

Lack of trust and understanding between the Sunni government and the Shia minority[8] has left the latter group deprived from benefits of the oil revenue for many years. The tension between the two sects have been further intensified following the 1996 bombing, though there has been no arrest in connection with it.

Western educated businessmen have emerged as the main advocates of liberal reforms in the kingdom. Generally, their criticisms of the royal family are muted, seen as compromised by their profitable involvement in the current economic system. There remains a continued resentment at the extent of corruption within the royal family and the privileges enjoyed by many junior princes, especially when this spills over into lucrative commercial contracts resulting in loss of businesses to the business community.

On the international front, the US-Saudi relations are primarily based on the need of the US for Saudi oil, and the Saudi's need for protection from both internal and external enemies. This kind of relationship, therefore, is regarded by many members of the government as a mutually dependent relationship, helping ease a variety of disagreements – most significantly, differing views on Israel. Despite such a close relationship, in many occasions the US Congress has blocked sales of advanced US weaponry to the kingdom in the fear that it could be used against Israel.[9] Historically, there has always been warm relations between the kingdom and most members of the European Union. As discussed earlier, the relations with Iran has improved significantly since the late 1990s, enabling the two countries to enter into a multi-dimensional dialogue on several political and economic issues.

Given its size, its political stance, its military capability and its economic and strategic importance, Saudi Arabia can and should be regarded as the leading force in the GCC. The speed at which the GCC can enter new phases of development does very much depend on the propensity and the extent of eagerness of the Saudis towards some structural changes outlined above.

6.2.2 Other Political Issues

From the OECD point of view, all the GCC states may be regarded as non-democratic: there are literally no political parties and hence no general elections in these states and a combination of the ruling family or powerful ministers control the economy. In the case of Saudi Arabia, the king is the supreme power, whereas in the case of UAE, a combination of the Federal National Council and the Council of Ministers to some extent limit the power of the President. The potential source of internal political problems in most of these states has very little to do with their citizens, but relates mainly to the question of succession and the ruling interest groups. In Saudi Arabia the next in line to the throne is Crown Prince Abdullah who is already in his mid-70s. If Prince Abdullah were to die in power, the next in line would be Prince Sultan who is also in his 70s. Sultan would, in turn, be succeeded by one of his brothers whom are already in their late 60s and early 70s. The kingdom, therefore, is being led by a succession of elderly rulers. The rivalry amongst all those 2000 Saudi princes can be intensified once there is no clear mechanism for establishing seniority in the Saudi royal family.

Moreover, the question of ruling families and their future roles in Bahrain and Kuwait is rather complicated, as the liberal elements in these states have already demanded for more fundamental democratic changes. The

question of future presidency and distribution of power in the UAE can also be quite problematic as there still remains some form of political and economic rivalry amongst the emirates – more significantly between Abu Dhabi and Dubai.

On the question of GCC leadership, though no genuine contest has been demonstrated against the Saudis, the UAE has always claimed to have been on the forefront of GCC formation through different economic reforms. There is also a tension amongst the smaller states as there appears to be a Saudi-Kuwait-Bahrain axis emerging within the GCC. This was clearly pronounced during the Iraqi invasion of Kuwait when Bahrain and Saudi Arabia gave full support to Kuwait, whereas the other GCC states remained rather neutral towards Iraq. As well as differing approaches to foreign affairs, military co-operation amongst the GCC states has also been limited, as the integrated GCC defence force has been under discussion for some time. Saudi Arabia can play an important role in the integrated GCC defence as her total military force of 105000 represents well over 70% of the total force of the GCC.[10]

6.3 Economic Factors

A large number of economic factors and indicators have been already examined in Chapter Two. Here we highlight a rather limited but important number of economic factors relevant to the question of GCC integration. Moreover, a number of recent developments will also be discussed here.

6.3.1 Infrastructure and Resources

The most recent estimate indicates that the overall population of the GCC stands around 27 million, of which 20 million live in Saudi Arabia.[11] The population is extremely young: 45% under the age of 15 years; 35% between 15-39 years and only 20% over 40 years. Significant efforts have been made to settle the nomads and to encourage them into farming activities. Currently, the population of nomads stands about 8%-10% of the total population of GCC.[12]

A considerable emphasis has been made in the GCC governments' plans on improving education. For example, in the 2000 budget, the Saudi government has allocated 27% of total expenditure to education, representing an increase of 15%.[13] In the other GCC states, according to 1998 estimates, education has been given the highest priority: the pupil-

to-teacher ratio in the overall GCC stands around 15 pupils per teacher and that being one of the best performing in the world.

Health provision and health facilities are generally financed by the government in the GCC and currently represent around 12% of total expenditure, an increase of 2% in real term. In Saudi Arabia alone there are nearly 300 hospitals and 2000 primary health centres, enabling 98% of the population to gain access to these facilities.[14] The ratio of population-to-doctor/nurse in the GCC is expected to be around 800, one of the lowest in the world.[15]

On transport and communication, road building and other infrastructure programmes have been given priority in all GCC countries over the past 20 years. There are 14 international airports (handling up to 50 million passengers a year) and several seaports in the GCC, mostly located in Saudi Arabia and the UAE. With the exception of the UAE, telecommunication is a fully state-controlled business. Major capacity expansion has been under construction in all areas of telecommunication. Mobile phone penetration rate in the GCC of around 75% is one of the highest in the world. Internet service is now available to public in all GCC states.[16]

6.3.2 Labour Market

The labour market in GCC is unique in the world in that around 60% of its total labour force being non-indigenous. Of the 3.5 million foreign workers in the GCC, between 45-55 percent are being engaged in activities relating to construction, manufacturing/trade or agriculture. On the other hand, of the 2.5 million indigenous work force, nearly 60% are employed in the public sector, and only 4-6 percent are engaged in manufacturing/construction works.[17] Owing to the fact that economic expansion may not be sufficient to absorb the growing labour force of GCC nationals, some GCC governments are already making efforts to curb the number of expatriates. In some cases this may include the deportation of 'overstayers' so that new jobs are filled by the nationals.[18] Naturally, the Saudis are extremely concerned about this potential problem, and have consequently implemented a series of policies at curbing the number of foreign workers. This process is referred to as 'Saudisation' – in the other five states referred to as 'localisation' - and has been brought in the 1995 budget raised the administrative expense of recruiting expatriates: work permit and visas fees were increased from $95 to nearly $450. Resolution No. 50 issued in 1996 required any establishment with 20 or more employees to Saudise at the minimum rate of 5% per annum. This target was raised later by 10%. The issue of

Saudisation has been clearly defined and elaborated in the Sixth Development Plan (1995-99) of Saudi Arabia, as shown in Table 6.1.

Table 6.1: Saudisation Target in Sixth Development Plan 1995-99
(No of workforce)

Economic Growth	191,700
Retirement	148,700
Replacement of non-Saudis	319,500
TOTAL	659,900

Source: Ministry of Planning, Statement on the Sixth Plan, 1995-99.

The scale of foreign workers replacement in the other GCC states is not as serious and important as that of Saudi Arabia. Nevertheless, the UAE has already begun following some of the Saudi's policies on deportation and raising work permit fees for the new foreign workers. It is estimated, that by 2010, the total replacement may reach around one million workers in the entire GCC, representing about 30% of the current stock of expatriates.[19] The increased availability of free education and training explains the growth in the number of Saudi job seekers with secondary education qualifications who represent nearly 25% of job seekers in 1998.[20] Despite readily available vocational and technical training in most GCC states, according to a survey in the early 1990s, nearly 80% of GCC job seekers refused manual work, and 75% prefer high status jobs rather than jobs with higher wages.[21]

As has been argued by Barsalu (1985), in most other parts of the world it would be inconceivable to pay a supervisor less than a subordinate simply because of nationality, but it is a common practice in Saudi Arabia, and to a lesser extent in other GCC states. In some other cases, experienced workers may be supervised by a less experienced and better-paid worker simply because the latter being a GCC national. This has a knock on effect on income distribution. A Saudi survey for 1996 discloses many important facts relating to wage differentials between the two groups of Saudi and non-Saudi workers.[22] According to this study, an average Saudi production manager, for example, receives an annual income of US$33,000, whilst his non-Saudi counterpart takes home only US$13,000. Such differentials are shown to be significant across different occupations and professions. It is estimated that the mean income of US$35,000 for a Saudi worker is highly significantly different from US$5,500 earned by a non-Saudi worker.[23]

Localisation is a policy that may potentially disturb the working of domestic markets and lead to business losses. As Saudi workers are reluctant to work at the same wage rates offered to their non-Saudi counterparts, wages are expected to increase. Loss in revenue product from labour may force businesses to move out and seek for new premises in other parts of the region. The establishment of the so-called free

islands of Quish and Quashm (Iranian islands) may be of attraction to businesses moved out of GCC. It has been reported[24] that 63% of firms interviewed in the rich region of Medina considered Saudisation policy as a negative factor affecting the labour market, pushing up wages in the medium term. One-half of such firms that were very heavily geared towards recruiting non-Saudi workers admitted that the weak commitment of Saudis to work was another main reason forcing them to decline Saudi workers. It may be concluded here that as the localisation policy gains momentum in the GCC, the local workers may enjoy higher wages in the short/medium term. However, as businesses find it difficult to maintain reasonable profits in the GCC they may seek investing elsewhere. Loss of businesses would force demand for labour to fall and that would bring wages down in the longer term. In the longer run, therefore, the local workers have to accept the wages determined by their local markets.

6.3.3 The Oil Dilemma

Since its formation in 1960, OPEC has aimed to promote the interests of the main oil exporting countries by co-ordinating their petroleum policies on world oil prices. Oman and Bahrain excepted,[25] the other GCC countries are active members of the OPEC. In the early 1970s when OPEC succeeded in altering the structure of oil prices in favour of

producing countries, the GCC states used these revenues to finance ambitious programmes of infrastructure, industrial and agricultural development. As explained in Chapter Two, heavy reliance on oil, on the other hand, led to serious cases of Dutch Disease particularly in Saudi Arabia, over the period 1975-85.

Policies aimed at diversifying away from crude oil production have been on top of the GCC agenda for nearly 20 years now. This is not necessarily to do with the seemingly depleting oil/gas reserves, but primarily related to plans promoting industrial development. In 1979, an estimate by OPEC showed that the GCC oil reserves may only last for just over 50 years. As shown in Table 6.2, with the further discovery of oil in the region, the oil reserves increased from 273 billion barrels in 1979 to 460 billion barrels in 1989. This means that given the current estimate of reserves of around 475 billion barrels, it would take 110 years for the GCC to fully deplete its reserves.

Table 6.2 Crude Oil Reserves and Production in GCC (billion barrels)

	1979	1989	1999
Reserve	273	460	475
Annual Production	5.1	2.9	4.3
Depletion rate (years)	53	159	110

Source: OPEC Annual Statistical Bulletin

The crude oil market is highly volatile, as changes in the world demand necessitate constant check on the supply. Such adjustments may have serious short-term effects on the economies of the GCC, as markets may not necessarily clear instantaneously. In Table 6.3 such volatility in supply and demand has been demonstrated on annual basis. As this Table suggests, in the mid-1999 there has been a significant excess demand responsible for higher prices of crude oil in that period. The Table shows that since then there has been a reverse scenario as the world oil supply has been significantly higher than the world demand and that has placed pressures on lowering oil prices, around $22 per barrel, significantly higher than that of 1998.

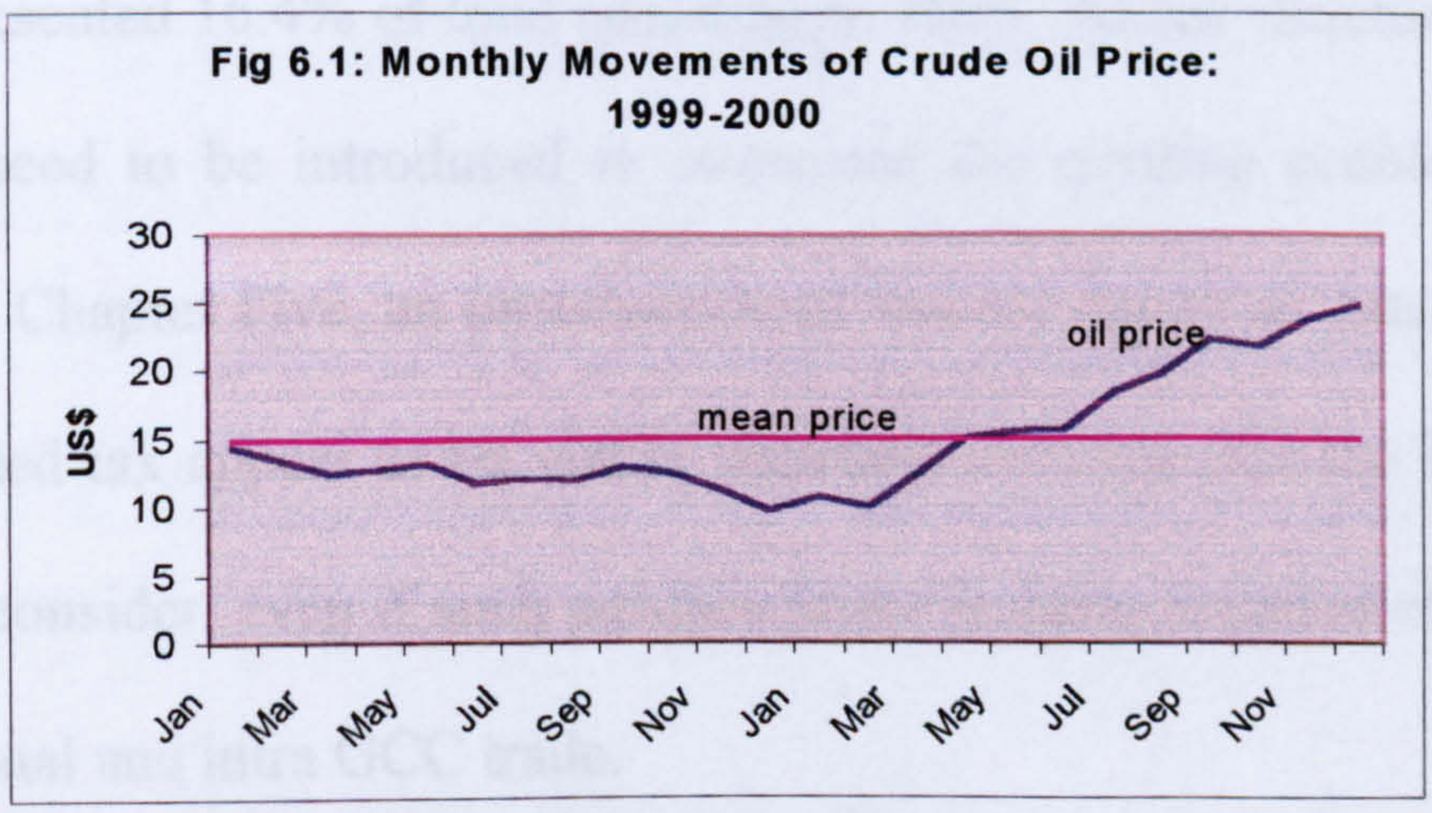
Table 6.3 Crude Oil: Supply and Demand
(million barrels/day)

	1998	1999	2000	2001
World Demand	74.0	75.0	75.7	76.9
World Supply				
OPEC	27.7	26.5	27.9	27.8
non-OPEC	47.0	47.4	48.7	49.2
Balance	0.7	-1.1	0.9	0.1
Oil Price ($US/barrel)	12	18	23	22

Source: OPEC Annual Statistical Bulletin.

Moreover, short-term volatility in oil prices can be quite disturbing for economic planners and policy makers. Such volatility has been depicted in Figure 6.1, where monthly oil price is shown to have moved erratically around its annual mean value. Since nearly 70% of the GCC budget is financed by oil revenue, these recent changes in oil price has led to a substantial and a rather acute budget deficit. In Saudi Arabia, for example, the deficit currently stands around 7% of GDP, a significant improvement compared to that of the period 1993-98 where the deficit averaged out around 10% of GDP per annum. In an attempt to reduce reliance on oil revenues, the Saudi government has already begun removing subsidies on a large number of domestic products and public services. The UAE has also suffered budget deficit of around 13% of GDP over the past three years, and that has triggered discussions over how to introduce means of increasing non-oil revenues.

Fig 6.1: Monthly Movements of Crude Oil Price: 1999-2000



The continual annual deficits in all the GCC states over the past decade or so has led to the accumulation of a substantial public debt. Whilst the debt-GDP ratio stands around 20%-30% in the smaller GCC countries, Saudi Arabia has reported a colossal debt ratio of 104% in 1999 - one of the highest amongst the oil producing countries – with a little hope of bringing it down in the near future.[26] As discussed earlier, policies aimed at reducing public debt has already taken momentum in Saudi Arabia, but such policies are rather restrictive as the economy still being highly dependent on oil revenues. In recent years the Saudi authorities have opted to finance budget deficit through domestic borrowing, and that has resulted in crowding out of the private sector investment, threatening the stability of the exchange rate.[27]

According to IMF, the interest payments on the stock of Saudi public debt represented 16.4% of total spending in 2000. Major structural fiscal reforms need to be introduced to overcome the existing problem. As argued in Chapter Five, an introduction of income tax or an extension of value added tax appear to be viable economic reforms that the kingdom needs to consider, even if such policies prove to have negative effects on international and intra GCC trade.

6.3.4 Deregulatory Measures

The GCC economies have always been in favour of promoting domestic private business involvement and foreign direct investment. In so doing, several measures of deregulation has been in place since the early 1990s. Although the governments of GCC dominate the ownership of the oil sector, the authorities are attempting to encourage greater private sector investment in other industrial/manufacturing activities. Moreover, the introduction of the new foreign investment regulations issued in April 2000 were intended to guarantee equal treatment for all investors. Such treatments may vary from state to state but in principle foreign investors may be allowed to invest directly in the GCC without having to form partnership with a GCC national investor. Moreover, foreign-owned companies may be eligible for soft loans, which may provide concessionary credit of up to 50% of a project's value.[28] Saudi Arabia and the UAE appear to be on the forefront of such deregulatory measures. Privatisation has been considered seriously by these states. The extent of privatisation tends to vary significantly from one state to another. For example, Oman excepted, electricity and water have been privatised since mid-1990s in the other states. Telecommunication is currently part privatised in all the GCC states: 60% in Bahrain, 20% in Qatar, 75% in Saudi Arabia, 70% in UAE, 70% in Kuwait, and 10% in Oman. Among the most prominent remaining candidates for privatisation are the national

airlines and the petrochemical/refinery groups. Some of these have already been part privatised in UAE and Bahrain. The largest petrochemical group in the GCC, the Saudi Basic Industries Corporation (Sabic) is 70% state-owned and operates 16 complexes, some of which are joint ventures with international firms. Crude oil activity excepted, it is highly expected that by 2010 almost all activities in the Gulf would be privatised.

Although operating at low level of activity and in a limited scale, stock markets in the GCC have grown momentum since the early 1990s. Due to increasing cases of privatisation and the emergence of new markets, number of total stocks exchanged in the GCC has doubled since 1995. All the nationals of the GCC states as well as non-GCC full residents are allowed to exchange shares in these markets. The Saudi Arabian stock market is an over-the-counter market, in which the commercial banks buy and sell shares by means of electronic trading. Although the system has facilitated transactions, the market remains relatively illiquid, because of its narrow range and small number of issuers. Qatar excluded, there are more formal stock markets in the other states. Bahrain, Kuwait and Oman stock markets opened in the late 1980s. The Bahraini stock market, for example, comprises of about 40 national companies with a market capitalisation of some $10 billion. In the case of Oman stock

market, exchange management is controlled by the Ministry of Commerce and Industry. By the late 1990s, there were some 90 stocks listed in that market with a combined capitalisation of $4 billion.

Although the UAE has been known as the forefront of privatisation in the region, the stock market has yet to develop. There is no formal stock exchange though shares in 30 companies are traded informally and managed by the National Bank of Abu Dhabi. The government is planning ahead with setting up a stock market in UAE, preferably copied from Oman.

6.3.5 Industrialisation and Diversification Policy

As explained and detailed in Chapter Two, the GCC states have given a significant priority to industrialisation and diversification away from oil. Having developed its refining industry and banking and trade, Bahrain has been the most successful state amongst the GCC to break away from heavy crude oil dependence. Crude oil production in Bahrain currently represents around 15% of GDP, compared to 17% back in 1995. In the other smaller countries- Oman, Qatar and Kuwait – there have been no significant changes in the structure of sectoral shares in the GDP. Of the larger states in the GCC, Saudi Arabia and the UAE, exhibit slightly different patterns of diversification. As shown in Table 6.4, the share of manufacturing (including refining, construction, electricity, gas and

water) as % of GDP has risen slightly for the two states. However, the UAE demonstrated to have been more successful in reducing its dependence on oil by as much as 15% over the period 1995-2000.

Table 6.4: Sectoral Shares of GDP (%)
Saudi Arabia and UAE

	Saudi Arabia		U A E	
	1995	2000	1995	2000
Manufacturing	21.2	21.5	21.2	23.3
Oil	32.3	32.2	30.5	25.6
Trade & Commerce	14.8	14.5	17.1	18.7
Agriculture	8.2	8.3	2.8	3.4

Source: Saudi Arabia Monetary Agency and UAE Ministry of Planning.

The difference in such performance, as shown in this Table, is due to the success of the UAE in promoting retail trade, commerce and banking over the period. Agriculture sector, though representing a small share of GDP in the GCC countries, over the past decade or so significant investment has been promoted and directed towards the sector. As offered in Table 6.4, agriculture though representing 8.3% of Saudi Arabia's GDP, there has been no relative improvements in this activity over the period.

In short, diversification away from oil, therefore, has been rather limited and insignificant in the GCC over the past five years.

6.3.6 Intra-GCC Trade

As explained earlier, GCC is attempting to forge greater regional economic co-operation, mainly through the elimination of barriers to the free flow of goods, services and factors of production among member states. However, progress has been slow. Goods from GCC are exempt from all duties, provided at least 40% of their value has been added within the GCC, and the producing firm is at least 51% owned by citizens of GCC states. The latter issue has been recently relaxed in Saudi Arabia, Bahrain and the UAE. Other recent steps amongst GCC states include: deregulatory measures on wholesale trade; authorising GCC nationals to engage in certain health service professions across member states; and harmonising rules on intellectual property rights and the settlement of business disputes.

The major area of complications and confusion relate to the lack of agreement on a common external tariff. Negotiations in 1995 led to standardisation of all goods and products, while those in 1996 agreed on classification of imports into (i) items to be exempt from tariffs; (ii) products/services attracting a standard tariff rate; and (iii) those requiring a higher tariff rate for protection of domestic industries. According to IMF, there has already been agreement on the common tariff for but 28 commodities out of total of 1289. In November 1999, the GCC members

finally agreed that they would unify and implement their import tariffs at between 5.5% and 7.5% by 2005, and such tariff band being the maximum allowed under WTO rules.

The GCC and the EU have been negotiating a free trade pact since 1988. Discussions have led to no clear cut solution: the EU insists that GCC should harmonise its own customs tariffs as the very basis of future negotiations; the GCC requests for the removal of EU tariff and non-tariff barriers on GCC petrochemicals as the basis of future negotiations. Mainly in the light of this obstacle, the share of trade between the EU and GCC has declined since 1985. This is depicted in Table 6.5 when direction of international trade for GCC is given. According to this Table, Japan has for many years remained the top trading partner of GCC. Although the EU was regarded as the second trading partner of GCC in 1985, it has lost its position to the US, which currently contributes by as much as 20% to total trade with GCC.

Table 6.5: The GCC Direction of Trade (%)

	1985	1995	2000
JAPAN	52.9	47.4	50.6
EU	16.3	13.4	11.6
US	10.9	17.8	20.3
Intra-trade	8.3	10.6	12.4
Rest of World	11.6	10.8	6.1

Source: IMF, Direction of Trade Statistics.

The Table also indicates that the share of intra-GCC trade has grown steadily since 1985, currently standing at 12.4% of total trade. Although care has been exercised by data collectors to identify and remove any re-exports within the GCC, it is still highly likely that up to nearly 20% of intra-GCC trade may include such items, particularly those destined from Dubai to the rest of GCC.

6.4 Summary and Conclusions

In this chapter we made an attempt to identify and examine those social, political and economic factors which may play important roles in the future of GCC. Of the socio-political issues, a small and insignificant number of factors are external. The question of the role of the ruling royal families in Saudi Arabia, Kuwait and Bahrain and lack of democratisation have been highlighted as main socio-political issues in the region. Whether the royal families in these states are prepared to enter into a phase of democratic changes remain to be seen. Due to its complex and delicate position in the Arab and Muslim world, it was argued that Saudi Arabia, needs to go through such changes more dramatically than the other GCC states.

Of economic factors, reference was made to a series of topical and fundamental issues. In particular, the question of how to replace the

foreign workers with indigenous work force can be regarded as seriously vexing. The costs and benefits of such localisation of labour force was examined and it was concluded that in the short term such policy disturbs the labour market by pushing up wages. However, in the longer run foreign investment may be forced to seek other places in the region, hence causing serious disturbances in all markets. It was also shown that due to significant reliance on oil, the diversification and industrialisation policies have worked less than satisfactory, placing much greater pressure on the authorities to enter into more dramatic policies.

Finally, when we examined the international trade between GCC and the rest of the world, it was noticed that Japan has remained as the main trading partner. Moreover, the trade between EU and GCC has been diminished due to the obstacle on tariff policies. Intra-GCC trade was shown to have slightly improved, but still a long way off the assumed target. In short, it can be concluded that due to a whole host of problematic issues, it is rather unlikely to assume dramatic changes to take place over the next few years. The best the GCC can come up with is to set up its common external tariff as effectively as possible. This may facilitate and improve trade amongst the GCC member states as well as with the rest of the world.

Endnotes

1. See Chapter Two where several arguments on this issue have been made in the earlier part.

2. In particular, see Chapter Four.

3. See EIU Country Profile: Saudi Arabia 2000, pages 11-12; where it is quoted Crown Price Abdullah of Saudi Arabia as saying "The USA has failed to pressure Israel into fulfilling its commitments under the peace accords".

4. Islamic *sharia* is a set of Islamic laws mainly relating to Quranic orders and other set of principles relating to both economic (tax collection and other duties) and social (personal and family laws) issues.

5. See EIU Country Profile :Saudi Arabia 1998.

6. For full details about the political structure of the Saudi Arabia, see EIU Country Report: Saudi Arabia, 2000,2001.

7. See EIU Country Profile: Saudi Arabia 1997.

8. Sunni and Shia are the two prominent sects of Islam. Shia are in minority in Saudi Arabia, estimated to be around 2, maily living in the oil rich eastern province. Since the Iranian revolution of 1979 the Saudis have always been fearful of their Shia minority being supported by the Shia government of Iran.

9. Op. Cit., page 11.

10. Source: International Institute for Strategic Studies, The Military Balance, 2000.

11. See EIU Country Profile, 2000, different issues.

12. See Al-Mutairi (1998).

13. Source: Ministry of Planning, Saudi Arabia, 2000.

14. Op.Cit.

15. Source: UN Development Programme, Human Development Report, 1999.

16. See EIU Country Report: Saudi Arabia and UAE, 2000

17. Source: Ministry of Planning, GCC, different years.

18. This process has been considered by Saudis as one of the most important economic targets which they hope to fully implement by 2010.

19. See EIU: Country Profile, Saudi Arabia, 2000.

20. Source: Ministry of Labour Annual Report, Saudi Arabia,1999.

21. See Al-Obaid and Ateiah (1994).

22. Source: Statistical Tables of Households, High Commission for Riyadth Development, 1996.

23. High Commission for Riyadth Development, op.cit.

24. Medina Chamber of Commerce, 1998.

25. These two countries, however, are members of AOPEC – the Arab OPEC organisation

26. Source: IMF, Staff Report, 1999.

27. For a thorough theoretical and empirical investigation into relationship between debt and private investment see Taghavi (2000) and Alesina and Roubini (1997).

28. The application of such regulatory measures in Saudi Arabia, for instance, means that foreign firms only qualified for local investment incentives if they accepted a Saudi equity stake of at least 25% in order to benefit from tax exemptions. Not all sectors will be opened to foreign investment, however. The governments retain control over mineral rights, thereby prohibiting participation in the upstream oil sector.

CHAPTER SEVEN

SUMMARY, CONTRIBUTIONS, LIMITATIONS AND CONCLUSIONS

7.1 Summary of the Main Findings

This research is based on an economic analysis of the Gulf Cooperation Council (GCC), formed in 1981 by six Arab Gulf states: Saudi Arabia, Kuwait, Bahrain, Qatar, Oman and the UAE. It is believed that the primary objective behind the GCC was to promote security and stability in the region, particularly through the integration of foreign and security policies. Secondary goals are believed to include the co-ordination of economic, financial and monetary policies. The power of economic integration is clearly outlined in the GCC's November 1981 Unified Economic Agreement (UEA), which superseded all previous bilateral and multilateral agreements among the members on economic issues. The UEA calls for intra-GCC freedom of movement of all factors of production, freedom of trade between member states and the building of a common economic infrastructure. In practice, however, integration has, until recently, been limited. Moves towards tariff unification was agreed in principle in 1993 but follow-up talks were slow and marred with disputes over common external tariff. In

September 1999, however, the six members finally accepted a draft set of customs laws and set the deadline for their implementation at March 2005. Customs union is a prerequisite for a free trade agreement with the EU.

The research has aimed to address and then find answers to the following two questions:

1. Has there been any significant improvement in the performance of these economies since the formation of the GCC?

2. Are the overall evidence indicative of any positive moves towards full economic integration?

In an attempt to find answers to these fundamental questions, the research has examined some important economic issues relating to the GCC member states, offered in Chapter Two. Major characteristics of the GCC economies were identified as follows. First, and foremost, the economies of all members of the GCC are heavily oil dependent. Second, migrant workers represent nearly half of the total working population of the GCC. Third, oil revenue is not accrued to factors of production, but earned by the GCC governments, and in return, zero income tax and very small value-added tax are offered to citizens. Fourth, owing to their massive petro-dollar earnings,

the GCC currencies are heavily linked with the US dollar and hence with one another, creating a rather stable intra-GCC currency markets. It was further argued that Saudi Arabia is the major contributor to the GCC, with her GDP and population representing around 60% and 75% of those of the total GCC, respectively; giving her a natural potential for leadership.

As elaborated in Chapter Two, for the GCC to succeed with its full integration plan, diversification away from oil must be deployed rigorously. To examine the extent of diversification in the GCC, we considered a large quantity of data on sectoral activities. Considering that there has been a massive reduction in the share of oil in GDP, the manufacturing seems not to have grown as fast as anticipated. Over the period 1975-85, its share grew by about 6.5% in the entire GCC, giving a rather disappointing average annual growth rate of just above 0.5%. Over the last twenty years manufacturing sector has seen to increase its contribution to GDP by about 3% for the entire period, a somewhat disappointing performance given that the oil sector's share has diminished by one-third. On the whole, the UAE and Qatar, given their relatively smaller scales of operation, have demonstrated much greater rates of growth of manufacturing of 9% and 8.6% respectively, over the entire period 1975-95, and those being

significantly higher than the average GCC. Despite substantial reduction in oil dependence over the entire period, GDP in real terms has grown by nearly 4% over the twenty year period, giving a long-run average annual growth rate of 0.2%. As figures suggest, massive growth in average GDP of 6.4% has occurred over 1975-85, and then slowed down since the late 1980s. On the whole, over the entire period, it appears that the UAE, Oman and Bahrain have managed to perform better than the rest.

Once being the states with healthy budget surpluses back in the 1970s, the GCC countries have been experiencing the pain of budget deficit for some time. In particular, since the early 1990s, mainly due to world-wide recession and depressed oil markets, the Gulf states' balances have deteriorated sharply. Saudi Arabia and Kuwait, the big earners and spenders, have been adversely affected, so that together are responsible for nearly 85% of total GCC deficit. In relative terms, these can be translated as 15% of Kuwait's GDP and 6% of Saudi Arabia's GDP. On the whole, given their current deficits, though not very significantly out of norm, this is somewhat unprecedented for these nations wishing to maintain their massive development plans for the future.

Finally, as carefully examined in Chapter Two, although the extent of intra-GCC trade found to be generally small, it has grown on an average rate of 0.5% per annum over the period - exports rising by 6.5% and imports by 2% per annum. Bahrain is by far the largest contributor to GCC-intra trade, with her shares of imports from and exports to GCC being significantly higher than the average values at the 5% level of significance. Moreover, Bahrain's total trade with GCC has more than doubled over the last ten years, currently standing at around 40% of her total international trade. Oman is also a major contributor to total intra-GCC trade: her share of intra-GCC imports represents nearly one-quarter of her total imports. It is believed that a large proportion of this share is due to re-exports of goods from UAE and Bahrain.

In Chapter Three models of economic integration with a special reference to customs union (CU) were discussed. It was argued that the justification for any regional economic integration is primarily based on the very assumption that such formations lead to net positive trade creation at zero/negligible cost to the rest of the world. Trade creation, in a sense, refers to the replacement of the expensive domestic production by cheaper imports from the partner. On the other hand, if the partner's imports are more expensive than those of

the world's, then trade diversion has occurred. Based on the main characteristics of these states, we build a model of customs union for GCC in Chapter Three. Given our limited sample size and data, it was argued that some simple sectoral models would furnish our objective. In so doing, a consumption function, for both durable and non-durable products, a log-linear production function for four different sectors, a log-linear money demand, and a log-linear import function were defined and structured.

Chapter Four has dealt with econometric estimation of the models explained in Chapter Three. Prior to such estimation, it was argued that the time series properties of our variables need to be established. In so doing, a considerable effort was made on applying the hybrid unit root test for stationarity to all our variables. Following from the unit root test, it was argued that stationary variables of similar order may reveal long run equilibrium within a given econometric model. To that end, this chapter conducted tests for presence of cointegration in all our models. The general finding was that in almost all cases there appeared to exist at least one cointegrating equation explaining long run relationship amongst variables within a given model. As the final estimation procedure, we included in our econometric models the cointegrating residuals to improve the degree of goodness of fit of our

models. In general, most of our models exhibited both functional stability and meaningful statistical significance.

The findings based on consumption behaviour are indicative of rather significant contributions to mpc through GCC formation. The estimated coefficient of the GCC dummy variables show that, on average, mpc has been boosted by around 25% since the formation of GCC in 1981, giving an annual growth rate of nearly 1.5%. In so far as labour productivity is concerned, the estimated production functions suggest rather limited productivity gain being achieved through the CU formation. Productivity gains through capital-labour substitution proved to be more pronounced in oil and chemical sectors than other sectors of most GCC states. That finding was further supported by the estimates of factor elasticity.

The estimated money demand model has indicated that generally the GCC states' money markets are less sensitive to interest rates and rather more sensitive to their domestic inflation rates. Moreover, the estimated coefficient of the dummy variable suggests that there is rather limited contributions made to money markets in the GCC through the CU formation. Finally, in examining the scale of trade creation through GCC formation we

have estimated intra-GCC import models for all the six states. Once again, the estimated results in Chapter Four show that there has been a rather limited and less significant contributions made to intra-GCC trade through the CU formation. In short, the size of trade creation has turned out to have been rather small since the formation of GCC in 1981.

In Chapter Five we conducted a simulation, based on the estimated findings of Chapter Four, in an attempt to measure the future performance of the GCC under different conditions and scenarios. In achieving this objective, an overview of some relevant forecasting techniques was offered. In conducting our forecasts, four scenarios were set: (i) individual macro variables following their past pattern; (ii) forecasts in the presence of a significant oil shock; (iii) forecasts based on a significant shock to the US$; and (iv) forecasts based on the assumption that a new form of income/corporation tax being introduced.

In conducting forecasts based on scenario (i) an ARIMA model was applied. Of some important issues arising from this type of forecast was that, other thing equal, both GDP and inflation rates tend to fall gradually and that the intra-GCC trade plummet further in the long run. Both scenarios (ii) and

(iii) should be treated as external shocks with rather varying impact on different members of the GCC. Under scenario (ii) we allowed the oil price to increase by 40% and decline by 25%, as these values were set on the basis of the historical pattern of oil price since 1970. Such one-off oil shocks were found to have serious effects on the overall economy and could last for up to 3-4 years. In particular, both relative prices and GDP were found to be highly sensitive to such shocks.

Under scenario (iii) we learnt that a one-off 10% drop in the value of US$ can markedly improve the intra-GCC trade somewhere in the region of 30%-40%, but such shock can seriously reduce GDP growth over the first two years following the shock. Once again the effective life of such shocks was found to be as long as 2-4 years. Finally, under scenario (iv) we learnt that an introduction of 10% income tax could seriously lower GDP and consumption growth rates in the short term. The introduction of income tax was shown to be an effective decelerating factor in intra-GCC trade.

In short, as the overall findings from Chapter Five suggest, the one-off shocks can be effective in the short term but in most cases lose their effectiveness in the long run. Moreover, such shocks are not necessarily

effective enough in creating sustained improvements in intra-GCC trade. Some other forms of stimulation are needed in these economies in order that the above objective is fully achieved.

Finally, in Chapter Six, we made an attempt to identify and examine those social, political and economic factors which may play important roles in the future of GCC, but have not been included in our econometric models. Of the socio-political issues, a small and insignificant number of factors were identified to be external. The question of the role of the ruling royal families in Saudi Arabia, Kuwait and Bahrain and lack of democratisation have been highlighted as main socio-political issues in the region. Whether the royal families in these states are prepared to proceed with full democratisation remains to be seen. Due to its complex and delicate position in the Arab and Muslim world, it was argued that Saudi Arabia is left in a dilemma, but whatever the changes, they need to be offered to their citizens. Moreover, Saudis have emerged as the natural leader of the GCC, meaning that democratic changes in Saudi Arabia would have a significant and lasting impact on the rest of the GCC. Moreover, some popular and practical socio-political policies were highlighted in Chapter Six.

Of economic factors, reference was made to a series of topical and fundamental issues. In particular, the question of 'localisation' of workers was identified as an extremely vexing issue. The costs and benefits of such labour replacement examined, and it was concluded that in the short term such policy tends to disturb the labour market by pushing up wages. This would mean that in the long run both incumbent and potential investors may be forced to consider investing elsewhere in the region, as cost of recruiting labour in GCC escalates. It was also shown that due to significant reliance on oil, the diversification and industrialisation policies have worked less than satisfactory, placing much greater pressure on the authorities to adopt more dramatic and radical policies.

Denationalisation and financial liberalisation have proven to be successful in the GCC. Privatisation of some utility and infrastructural businesses has led to significant growth in business confidence and a call for more structured stock markets throughout the GCC.

Finally, when we examined the trade between GCC and the rest of the world, it was noticed that Japan has remained as the main trading partner. Moreover, the trade between EU and GCC has been somewhat diminished

due to the obstacle on tariff policies. Intra-GCC trade was shown to have slightly improved, but still a long way off the assumed target.

7.2 The Contributions of the Research

Although an economic investigation of GCC may not necessarily be an original piece of research work, this thesis, however, has made an attempt to offer some contributions to the main theme from the following angles:

i) Model Building:

The models of different sectors of the economy offered in Chapter Three may appear to be rather simplistic, but in practice have shown to be suitable CU models for the GCC, as they do incorporate the main features of such economies.

ii) Data Collection:

The research has made a comprehensive search in collecting and collating relevant micro and macro data (both primary and secondary information). In particular, data relating to 1970-75 have been rather difficult to obtain, as serious data collection and compilation conducted by GCC agencies only dates back to the early 1970s. The research has conducted, in some areas, a double checking process for the quality of data offered by different agencies. In particular, in the

presence of subsidies in most GCC states, the research has made an effort in removing the subsidies from the published price series, in order that the true picture of markets to emerge. Despite this, it is still believed that data on some prices may be contaminated by such subsidies and other forms of state intervention. Moreover, the data for consumer spending is generally offered in totality and only for some years considered to distinguish between durable and non-durable goods. In this research we have, for some states and some periods, derived and estimated such data residually.

iii) Time Series Properties:

In all cases we applied the method of testing for non-stationarity using the unit root test. Moreover, in search of long run equilibria, we conducted tests for cointegration applied to all our models. The findings, as shown in Chapter Four, were overwhelmingly supportive of cointegration application.

iv) Diversification and Trade:

A number of research work on GCC have concentrated on measuring the extent of diversification or of trade creation by different means. Here, amongst other things, we have demonstrated the extent of interaction between diversification and intra-trade and the likely

effects on the rest of the economy. In particular, in all our models a dummy variable has been added to measure the extent of the change between the pre and post GCC formation.

v) Forecasts:

Based on both estimated models – Chapter Four -and different viable scenarios, we conducted a series of forecasts for each and every GCC member state. The forecasts reveal some interesting results which may well be of use to policy makers, businesses and researchers.

vi) Qualitative Issues:

In Chapter Six we made an attempt to search for and elaborate on some qualitative and yet fundamental social, political and economic issues which had been excluded from our econometric models for a variety of reasons. It was critically argued that unless such changes are made, it would be hard to imagine that the GCC unification may ever function properly.

7.3 The Limitations of the Research

In this research our aim has been to build and apply a suitable and yet workable model of the GCC economies. Despite that, there still remain a number of limitations attached to this research work which may be

summarised as follows:

i) Data Reliability and Sample Size:

Although macroeconomic data reported by the member states and endorsed by international agencies appear to be reliable, there are some degrees of reservation about the calculation of price indices, as they include subsidised goods and services. It is anticipated that if such subsidies are identified and removed from these series, general price indices in the GCC would be very much in line with that of the OECD. At micro level, however, the extent of reliability is rather limited, as different states adopt different methods and definitions for these indicators. The data is based on annual series and only goes back to 1970, giving a relatively small sample size to play with. Moreover, on most activities, quarterly data are not available, though in most recent years such data on major economic indicators are published.

ii) Econometric Models:

As explained earlier, the methods and models developed in Chapter Three and estimated results of such models in Chapter Four are based on assumptions most relevant to the economies of the GCC states.

The major drawback of the study may be associated with the import function being on aggregated and rather simplistic form. Ideally, in examining the extent of intra-trade one needs to apply the model to a large number of products/services markets. This will enable one to identify the areas/markets in which trade creation may occur due either to cost reduction or to significant complementarity. Due to unavailability of consistent data on intra-trade at the product level, the research was confined to the use of aggregate import function. Moreover, the production function applied and estimated here is rather simple, as it does not distinguish between skilled and unskilled labour and their shares from production. This was mainly due to lack of data in this area.

iii) Non-economic Factors:

On the whole, the analytical framework presented in this research is one of economic integration, looking primarily at market relationships among goods and factors of production. The research, therefore, has overlooked the relevance of institutional and political forces in the model of economic integration. Some important non-economic issues have been raised and examined in Chapter Six, but have not been included in our econometric models. The findings derived from these

models, therefore, reveal only a small part of the story, and need to be considered in relation to other non-economic issues.

7.4 Conclusions

Research on regional integration has been on the agenda of social scientists for well over fifty years. Whilst political scientists have examined the factors giving rise to political uncertainty within a defined region, economists have considered integration as formation of a union which can potentially generate trade and improve welfare of the community. This research is primarily based on an economic investigation of integration amongst the six small oil producing Arab Gulf countries – the GCC. Nevertheless, some relevant socio-political and institutional issues have been raised and related to the findings derived from our economic models. Though the initial objective of the GCC has been to form a political or an inter-governmental union, the research has examined areas in which a workable and a viable economic integration may be considered fruitful.

As has been elaborated by Mattli (1999: 189-93) both demand and supply conditions must be met in order to proceed with integration. If demand for and supply of integration (reforms leading to full integration) are significant

in a given region, then the region would enjoy a great chance of success. Where demand for integration may come from all economic and political actors in the region, the supply of integration is primarily determined by the willingness of politicians to sacrificing/limiting their internal power at the expense of the union. Currently in the EU, for example, demand for integration – e.g. complementarity and scale economies - is highly significant. However, due to lack of full commitment by a few political members of the EU, the progress has been relatively slow. In the case of GCC, however, as both demand and supply were found to be rather limited, it was argued that at this stage a form of customs union may prove applicable. The full economic integration within the GCC may then rest on the extent of trade creation through economic diversification, once the CU is operational. In the early 1980s when the threat of Iran-Iraq war on GCC had escalated and the presence of the US naval forces in the Gulf had become eminent, then demand for some form of integration was evident. Moreover, the suppliers of such integration – the governments of the GCC states – were also willing to speed up with the signing of a pact which would secure these nations against their potential enemies.

An offshoot of this integration was the signing of an economic agreement – Unified Economic Agreement (UEA) - back in November 1981 - pronouncing the willingness of these nations to participate in an economic integration. As argued earlier, since the early 1990s when such threat has become less of an issue, there has been very little willingness and direction in the GCC, as the suppliers have become less eager in pursuing this policy. As shown in Chapter Two, intra-GCC trade as percentage of total trade, though has grown at the average rate of around 0.5% per annum since 1985, it currently represents only 13% of total trade - much lower compared to those of intra-EU at 65% and intra-NAFTA at 50%.

Considering all the findings derived from both the data and econometric estimation, one can summarise that diversification, industrialisation and general economic innovations have been rather limited in the GCC over the past two decades. As mentioned earlier, successful economic integration rests primarily upon the idea of trade complementarity and evidence of scale economies, both of which shown to have been limited and growing slowly. In short, it can be concluded that due to a whole host of problematic issues, it is rather unlikely to assume dramatic changes to take place over the next few years. The best the GCC can come up with is to set up its common

external tariff in line with the WTO recommendation as effectively as possible. This may facilitate and improve trade amongst the GCC member states as well as with the rest of the world, providing that the GCC governments are willing to proceed with the reforms/changes outlined above.

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